NORTH MEMORIAL HEALTH

Adapted for NMH from version 1.10 of M Health/Fairview COVID-19 OB Recommendation

ADDITIONAL OB COVID GUIDELINES

1. General L&D Recommendations for ALL OB Patients (not only COVID-19/PUI)

- Do not use oxygen for fetal resuscitation.
- Stewardship of blood supply. Active management of labor per Hemorrhage and Anemia Care Process Models on the Intranet.
- Visitors per system policy. Encourage patients and their visitor(s) to remain in their rooms.

2. PUI or COVID-19 Positive Patients Upon Patient Arrival to Labor & Delivery

- Patients presenting for medically indicated deliveries who screen positive on arrival should not be rescheduled due to the risk of a less controlled delivery or worsening maternal disease as disease severity peaks in the second week
  - Recommend proceeding with delivery
- Isolation per hospital protocol
- Limit traffic in the room to essential personnel. Consider getting consents while in the room (ex. Cesarean) even if procedure not currently planned or consider consent by phone.
- Consults/alerts:
  - For asymptomatic patients:
    - L&D charge nurse to notify NICU charge nurse
    - Status board and grease board will display a yellow biohazard sign in the isolation column to notify team members of COVID positive status
  - **For symptomatic patients with moderate to severe illness, consider the following based on clinical scenario:**
    - Infection prevention (done by charge nurse)
    - Anesthesiology
    - Neonatology/pediatrics
    - Depending on clinical status: MFM, ID, hospitalist and intensivists
- Assess vital obstetrical symptoms and COVID-19 test for admissions
  - Refer to Diagnostic Algorithm – Pregnant Patients
- Laboratory testing as appropriate (see below)
- Antipyretics, if indicated
- Determine appropriateness for admission to L&D versus antepartum versus higher level of care refer to Diagnostic Algorithm – Pregnant Patients
  - Follow cohorting based on unit plans, if in place
- If a patient appears ill (see below) and/or requires more than 3L NC to maintain oxygen saturation 95% consult intensivist or hospitalist consult
- If patient to stay on L&D
  - Review antepartum maternal and fetal risk factors

ADDITIONAL OB COVID GUIDELINES

3. Management of asymptomatic/mildly symptomatic COVID/PUI pregnant women requiring obstetric admission:

Mode/Timing of Delivery

- Infection with COVID-19 is not an indication for delivery, unless otherwise indicated.
  - No need for delivery <39 weeks in patients with mild symptoms unless otherwise indicated, which may include concern for worsening maternal status.
- Infection with COVID-19 is not currently considered an indication for cesarean, but mode of delivery is dependent on maternal and fetal status.
  - Counsel patient on the limited data regarding vertical transmission; both transplacental and at the time of delivery.
  - Virus has been recovered from stool.
- Every effort should be made to avoid emergency cesarean, continuous monitoring of a category II electronic fetal heart rate.
- Patients should be informed about the potential delay in an emergency cesarean due to the need for obtaining and donning appropriate PPE.
- Consider a huddle to assess the likelihood of general anesthesia for the patient (e.g. declined an epidural). This huddle may include the provider, anesthesiologist, neonatologist, the patient's nurse and the charge nurse, this will help anticipate the likelihood of an aerosolizing procedure which requires a change in PPE for the staff in the room.

Labor Management

- Supplemental oxygen for maternal indications as needed per hospital protocol
  - Goal is to maintain maternal oxygenation at or above 95%
  - If a patient needs more than 3L per minute to maintain saturation at or above 95% this should prompt an evaluation of need for intensive care
- Supplemental oxygen should not be used for fetal heart rate resuscitation
- Continuous fetal monitoring throughout labor
- Strong recommendation of early epidural to minimize need for general anesthesia in the event of cesarean
- Nitrous oxide labor analgesia is non-aerosolizing and may be offered to patients regardless of COVID status
- Individualized decision about assisted second stage, conflicting opinions about safety and possible increased risk of transmission
- Unknown whether internal monitoring such as FSE has any risk, reasonable to avoid
- Continue reviewing for new risk factors that might require neonatal resuscitation, on-going huddles about patient status
- Offer advanced notification to NICU team needed based on clinical scenario. Status board and grease board have isolation column to provide quick reference for NICU stat.

Delivery/Infant/Postpartum

- Separation of mom and baby in accordance with COVID Universal OB Testing Guidelines and individualized based on clinical scenario and bed availability. These recommendations should be discussed early in the admission process.
- Consider cord gases
- Transfer baby to warmer immediately after birth for evaluation
- Postpartum the patient will remain in her room

ADDITIONAL OB COVID GUIDELINES

4. Management of PUI & COVID-19 positive pregnant women with moderate-severe symptoms requiring admission for any indication:

- Isolation per hospital protocol
- Limit number of providers in the room to essential personnel (1 RN and 1 MD)
- Consults/alerts to consider:
  - Infection prevention (done by charge nurse)
  - Anesthesiology
  - Neonatology/pediatrics
  - Consult intensivist or hospitalist
  - Consider infectious disease consult
  - Consider MFM consult
  - Other consults as needed based on maternal co-morbidities
- Oxygen therapy as indicated (target O2 ≥ 95% and/or pO2 ≥70mmHg)
  - If a patient needs more than 3L per minute this should prompt an evaluation of need for intensive care
- Avoidance of fluid overload unless cardiovascular instability is present
- Consider empiric antibiotics +/- coverage for influenza per the guidance of consultants
- Fetal & uterine monitoring depending on GA and status, individualized
- Individualized delivery/termination planning depending on GA, maternal condition, fetal stability and maternal wishes
- Determine location for admission taking into consideration cohorting based on facility planning/resources
- Early mechanical ventilation for progressive respiratory therapy

ADDITIONAL OB COVID GUIDELINES

5. **Recommendations about use of specific obstetric medications:**

Tranexamic acid: caution with COVID patients due to increased risk for VTE associated with COVID.

Medication	Mild—Moderate Disease	Severe—Critical Disease

Antenatal Corticosteroids	Assuming no steroids for COVID-19:
	• < 34 weeks, give as indicated (no late preterm)
	• ≥ 34 weeks, do not give
		Assuming Steroids for COVID-19:
		• < 34 weeks:
		  • Dexamethasone 6 mg IV Q12 x 4 doses then
		  • Dexamethasone 6 mg PO/IV daily per protocol for up to 10 days
		  • Recommend against switching to another type of steroid
		• ≥ 34 weeks:
		  • Dexamethasone 6 mg PO/IV daily per protocol for up to 10 days

Magnesium Sulfate	If clinically indicated with, close cardiopulmonary monitoring. Monitor renal function and magnesium levels, consider bolus only if mild respiratory distress. Monitor UOP strict I & O Q 2 hours.	Individualize depending on maternal status, indication for use and gestational age, more neuroprotection at <28 weeks. Discuss with consultants (e.g. ICU).
Tocolysis	Consider as indicated, avoiding indomethacin if possible (prefer nifedipine). Stronger consideration if indication for hospitalization is not COVID-19 and/or patient is <28 weeks.	Not recommended.
NSAIDS	Standard use, maximize acetaminophen.	Check current guidelines, multidisciplinary decision.

ADDITIONAL OB COVID GUIDELINES

MHealth/Fairview COVID-19 OB Recommendation

ACOG/SMFM Illness Severity Assessment (smfm.org/covid19)

- Difficulty breathing or shortness of breath?
- Difficulty completing a sentence without gasping for air or needing to stop to catch breath frequently when walking across the room?
- Coughing more than one teaspoon of blood?
- New pain or pressure in the chest other than pain with coughing?
- Unable to keep liquids down?
- Show signs of dehydration such as dizziness when standing?
- Is she less responsive than normal or does she become confused when talking to her?

Maternal Early Warning Signs (Mhyre et al, 2014)

- Systolic BP (mmHg) <90 or > 160
- Diastolic BP (mmHg) > 100
- Heart rate (bpm) <50 or >120
- Respiratory rate (bpm) <10 or > 30
- Oxygen saturation on room air <95%
- Oliguria, ml/hr for 2+ hours of <35
- Agitation, confusion, unresponsiveness, preeclampsia with unremitting headache or shortness of breath

2007 Infectious Diseases Society of America/American Thoracic Society Criteria for defining severe community-acquired pneumonia. Validated criteria includes wither one major or ≥ three minor (ISUOG Interim Guidelines on 2019 Coronavirus)

Minor

- Respiratory rate ≥ 30 bpm
- PaO2/FIO2 ratio ≤ 250
- Multi-lobar infiltrates
- Confusion/disorientation
- Uremia (blood urea nitrogen level ≥ 20 mg/dL)
- Leukopenia (white blood cell count <4000 cells/mL)
- Thrombocytopenia (platelet count <100,000/mL)
- Hypothermia (core temperature <36° C)
- Hypotension requiring aggressive fluid resuscitation

Major

- Septic shock with need for vasopressors
- Respiratory failure requiring mechanical ventilation
- Confused

ACOG/SMFM Clinical and Social Risks (modified) (smfm.org/covid19)

Maternal Co-morbidities

- Immuno-compromised/suppressed
  - Transplant
  - Active treatment with biologics
  - Prednisone >20mg/d
  - HIV
- Class III Obesity
- Insulin dependent or poorly controlled diabetes
- Maternal cardiac disease
- Hypertensive disease requiring medical therapy
- Renal insufficiency or chronic liver disease
- Moderate/severe respiratory disease (i.e. asthma requiring treatment; CF)
- Active cancer

Obstetric Issues (e.g preterm labor)

Inability to care for self or arrange follow-up if necessary

Labs/Imaging

Labs

- Type and screen
- CBC with differential
- Comprehensive metabolic panel
- COVID-19 testing
- Influenza testing
- Procalcitonin (+/- CRP)
- Ferritin & LDH
- Arterial blood gas (if severe)
- PT, PTT, INR, fibrinogen (if severe)
- Blood & urine cultures (if indicated)
- Treponemal antibody (if admitted for delivery)
- Serial CBC, CMP, coags depending on severity
- If severe ask intensivist for other desired labs

Imaging

- Chest x-ray versus CT (if severe)
- Bedside ultrasound for fetal position/MVP

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Drs. Cross, France & Landers 3/25/2020 15:20 PM

References:

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3. Poon et al. ISUOG Interim Guidance on 2019 novel coronavirus infection during pregnancy and puerperium: information for healthcare professionals. doi: 10.1002/uog.22013.
4. Hamel et al. Oxygen for intrauterine resuscitation: of unproven benefit and potentially harmful. AJOG. 2014.
5. Coronavirus: COVID-19 Infection in Pregnancy: Information for Healthcare Professionals. Royal College of Ob/Gyn. March 13, 2020.
6. Boelig et al. Labor and Delivery Guidance for COVID-19. AJOG. March 2020.
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8. FDA Website: FDA advises patients on use of non steroidal anti-inflammatory drugs (NSAIDS) for COVID-19 https://www.fda.gov/drugs/drug-safety-and- availability/fda-advises-patients-use-non-steroidal-anti-inflammatory-drugs-nsaids-covid-19 accessed on 3/25/2020 9.
9. Expert opinion from the University of Minnesota MFM group.

COVID-19 WORKGROUP FOR THE OB/GYN CLINICAL PRACTICE COUNCIL

This team represents expertise in Obstetrics. If you would like further information, please contact the work group lead, Todd Stanhope, MD - Todd.Stanhope@NorthMemorial.com.

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Revision History

This document is active and further recommendations are forthcoming. It will be updated as additions develop.

Revision	Description of Changes	Approvals	Date
4.0	Continuance of Initial Document	OB/GYN Clinical Practice Council	08-17-2020
5.0	Changed nitrous oxide guidance—no longer requires a negative test result (page 2)	OB/GYN COVID-19 Workgroup	10-27-2021
6.0	Removed Remdesivir and Convalescent Plasma Treatment options; Incorporated updated MHealth MFM recommendations (see table on page 5)	OB/GYN Clinical Practice Council	09-02-2022