COVID-19 and Pregnancy Key Points:

- Pregnant women NOT more susceptible to COVID-19 infection
- Most affected by COVID-19 make full recovery; 10-20% develop a moderate to severe illness
- Most common presentation of COVID-19 in pregnancy: fever > 37.8oC, cough

- Co-morbidity increases the risk of severe illness (DM, hypertension, PET, BMI, asthma, immunosuppression)
- 2 cases: COVID-19 induced cardiomyopathy in pregnancy
- 2 cases of maternal death (pp)
- If COVID-19 + patient does deteriorate, typically day 7-9 after symptoms

- 2 cases of infection in T2 between 18-20 w; 1 case T1 infection (local experience; **not published**)
- No data to suggest increased risk of T1/T2 SA or teratogenicity
- Evidence suggest vertical transmission is probable (1 confirmed UK case and 1 MSH case)
- 2 cases reported of PPROM
- Several cases of preterm birth: iatrogenic for maternal health concerns OR fetal health concerns.
- 1 case of IUFD **reported**: may be related to the critical illness of mother (mechanical ventilation)
- 3 cases of IUFD at term **not reported** – one associated with co-morbidity drug addiction

COVID-19 and Antenatal Management:

Indications for admission: (based on illness assessment +/- co-morbidity)

- Shortness of breath (unable to walk across room, speak full sentence)
- Cough with blood
- Chest pain
- S/S dehydration
- Decreased level of consciousness
- Oxygen saturation < 94%
- CXR consistent with pneumonia (ground glass opacities)

Admission Investigations:

Baseline at admission, repeat as indicated

- COVID NP swab
- ECG
- Routine bloodwork: lytes, creatinine
- Prognostic bloodwork: CBC, PT, PTT, CRP, LDH, ferritin, fibrinogen, d-dimer (not to be used to detect risk of VTE as in non-pregnant population)
- Blood gas (suggest venous- if abnormal proceed to arterial blood gas)
- CXR
- 2D ECHO (maternal) if severe illness/ICU admission
- CT scan only if clinically indicated (rule out pulmonary embolism) (single scan with abdominal shield does not exceed radiation dose in pregnancy)

* **Consultation with ID , OB Medicine and ACCESS (ICU)**

COVID-19 and Antenatal Management:

Considerations:

- Start empiric thromboprophylaxis (enoxaparin) as hospitalized pregnant (decreased mortality in severe illness in GIM pop/n)
- If taking ASA (low dose for prevention of PET) consider holding until recovery complete (suggested to exacerbate acute kidney injury in critically ill COVID patient
- Restrict use of indomethacin for TPTL; consider alternative tocolytic agent

Surveillance & Warning signs

- Vitals with O2 saturation q4h- if requiring oxygen support increase vitals to q hourly with 1:1 RN care

- <u>If requires:</u> New use of oxygen support ** WARNING SIGN
  RR increases despite normal O2 saturation
  Increasing amount of oxygen to maintain saturation >94%

- <u>Warning signs of maternal deterioration- consideration for delivery</u>
  Increased O2 demands by 50% over 1-2h
  O2 sat < 94% despite O2 support
  >4.0L O2 by facemask

If preterm:

Once maternal respiratory deterioration, initiate celestone Rx in preparation for potential iatrogenic preterm birth
On mechanical ventilation, in consultation with ICU and the NICU team…

a. If < 28w GA and can maintain mechanical ventilation: expectant management
b. If >28 w GA and CAN NOT maintain mechanical ventilation: consider delivery

NOT to improve maternal disease process, not to alter fetal/neonatal outcome

if delivering < 34w GA, give MgSO4 4g bolus before delivery- over 1 hour to limit maternal respiratory depression.

COVID-19 and Intrapartum Management: Key Points

- Regardless of GA and disease severity: recommend hospital birth
- Regardless of GA: CEFM based on case reports of fetal compromise in women with COVID-19 diagnosis (8/18 – 44% incidence)
- If mild symptoms: Maternal vital signs (HR, BP, RR, O2 sat) q 2h.
- If moderate symptoms: Maternal vital signs (HR, BP, RR, O2 sat) q 1h. Oxygen to keep O2 sat >94%
- Hourly fluid status to avoid fluid overload (affects ventilation, work of breathing)
- No hydrotherapy in labor/birth
- Encourage epidural anesthesia: minimize risk for GA
- No use of nitrous oxide for pain management (potential aersolization)
- No indication for C/S unless to improve maternal resuscitation efforts
- Emergent C/S for OB indications not because of COVID diagnosis
- Elective C/S should not be delayed based on COVID diagnosis unless need for maternal stabilization.
- COVID diagnosis is not an indication for IOL; diagnosis of COVID is not a reason to delay an indication/urgent IOL unless need for maternal stabilization.

- **Consideration**: If SOB, maternal exhaustion or increasing hypoxia: may use assisted vaginal birth to shorten the second stage

** After delivery specimens to be sent: Placenta swabs, tissue for micro and for histology; Cord blood for virus PCR

Key Points for Fever in Labor

- Temperature >37.8oC
- Give 500 cc fluid bolus (takes 30 min)
- Repeat temperature 30 min after bolus completed
- If still >37.8 (or any other symptoms) ….

- NP swab
- Initiate Droplet /Contact Precautions

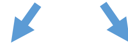
- Partner is now also a PUI
  - must stay in room… NO leaving !!!
  - must wear mask if leaving room … ie going to OR ** waiting on final word for anesthesia if they can be in OR
  - must leave if her swab is positive

- IF > 38oC … initiate chorio workup and treatment … NB not alone an indication for C/S

** <u>Misoprostil use for term IOL:</u>
- 25-50 ug dose for IOL will not give temp

Key Points for TOP: Antenatal Unit or L&D

Patient is screened at entry &
again on admission (with maternal temp check)



Screen negative (asymptomatic)

Proceed to IOL

1st dose of misoprostil with Tyelenol (1000g) po

Dose misoprostil q 4h
Dose Tyelenol q6h (standing, regardless of maternal temp)

If temp > 37.8oC:
bolus 500cc over 30 min
Recheck temp 30 min after bolus complete
If remains >37.8oC… patient is now a PUI

NP swab and Droplet/Contact Precautions

Screen positive (symptomatic).. Patient is a PUI

NP Swab and Droplet/ Contact Precaution

1st dose of misoprostil + Tyelenol (1000g) po

Dose misoprostil q 4h
Dose Tyelenol q6h (standing, regardless of maternal temp)

* Can substitute ASA (325mg) if allergy

COVID-19 and Postpartum Management: Key Points

- Supportive care: oxygen, anti-pyrexia medication
- No relapse of symptoms was found after delivery
- If severe disease, consider use of empiric thromboprophylaxis
- Restrict the use of NSAIDS for post-partum pain management
- Once symptoms improve, continue with ongoing observation
- May have rapid deterioration typically 24-48h after improvement

- If admitted for birth without symptoms, continue, monitor for s/s COVID as may develop symptoms during hospitalization (incubation period mean 5-6d (0-14d): new onset respiratory s/s OR fever > 37.8oC.

- Safe for discharge if clinically well. Instruct to continue to quarantine for 14 days after onset of symptoms

- No need for repeat COVID testing.

COVID-19 Recovery Algorithm

1. COVID diagnosis confirmed. Stays as an outpatient. Performs 14d self-isolation. Now has no symptoms consider COVID recovered. Does not need a swab for "test of cure". Can come back into medical system as COVID recovered/not infectious/negative.

2. COVID diagnosis confirmed, admitted for COVID support but then discharged before the 14d completed. Complete 14d self-isolation. Now has no symptoms, consider COVID recovered. Does not need a swab for "test of cure". Can come back into medical system as COVID recovered/not infectious/negative.

3. **COVID diagnosis confirmed, admitted for COVID support and/or OB indication and is NOT discharged.** At day 14 and with no symptoms we should perform 2 sets of NP swabs separated by 24h- both need to be negative and then she will be clear and released from droplet precaution (as per IPAC at MSH) Then she will be treated by us as COVID recovered/not infectious/negative.

***** If still antepartum:** Ongoing fetal surveillance within 14d of discharge: BPP with Doppler and EFW