COVID-19 Survival for the Ob/Gyn Hospitalist as of 3/29/20

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Things are changing every day, keep checking your resources!

**Team approach**

Reducing provider cross-over: consolidate providers and separate teams for OB ED/COVID triage vs L+D vs postpartum and emergent gyn with back up all around. No provider “specialing” patients, scheduled cesareans done by L+D team.

Daily updates: 5 pm Webex for all providers, administrative leaders, very helpful for consistency, support

Telehealth: clinic staff much reduced due to childcare issues, illness. Majority of visits converted to telehealth; patients given blood pressure cuffs. OB ED providers alert to need for upcoming labs (ie diabetic screen, RhoGAM, GBS screen). Antenatal testing guidelines more stringent.

ICU coverage: requested of clinic providers/surgeons to serve as a “resident” in ICUs due to volume

Generalize blood shortage, transfuse all patients conservatively

**PPE**

Be wary, there is a reluctance for admin to acknowledge PPE shortage.

Masks: ear-loop masks worn by all employees and patients in the hospital. Homemade masks are not allowed.

N-95: always in short supply, distributed 1/provider (for the duration!) and covered with surgical mask to keep clean. Worn for all interactions with persons under investigation (PUI) or COVID-19 positive patients. Designated “single use” but we are reusing unless soiled. They need to be stored in a paper bag (not plastic I do not know why). It is very uncomfortable to wear for any length of time, cannot imagine how people manage Ebola PPE. CDC statement strongly discourages extensive re-use but we have no apparent choice, statement here: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/checklist-n95-strategy.html> Also beware of fakes, true N-95s are stamped with “N-95” and have 2 elastic straps.

Eye protection: “welder’s mask” face shield ran out immediately, replaced with surgical mask with visor worn over N-95 in needed. Eye glasses not sufficient. Tip for comfort in warm room: turn surgeon’s masks upside down and roll up the mask part for your forehead (sort of sweatband), allow the visor to come down over eyes, nose

Gowns: very short supply, substituted surgeon’s gowns. Remove gown prior to leaving room, hang on door so that it can be used again for same patient. Do not use same gown for different patients.

Gloves: standard gloves, foam with hand sanitizer prior to removing gown if it will be saved for use so you minimize your chance of getting contaminated when you put it back on. If you have to check a patient, sterile glove goes on over PPE glove

Because our testing turn-around was >7 days we burned through much PPE protecting ourselves from PUI. I suggest pushing for aggressive testing of in-patients to preserve PPE

Handwashing: constant.

Don and especially doff PPE in specific order to prevent self-contamination as specified here: https://www.cdc.gov/niosh/npptl/pdfs/PPE-Sequence-508.pdf

Bleach wipes: brought from home for wiping down call room, phones, computers, bathrooms, door handles, visors

**Primary symptoms**

Flu-like: cough, SOB, congestion, fatigue, muscle aches, sweats, nausea, vomiting, diarrhea, anorexia, lost sense of taste and smell

Abdominal pain: sometimes primary complaint, first positive patient was gyn r/o ovarian torsion, rapidly deteriorated after dx lap

Fever: initially low grade (ie <100.4) and responds to Tylenol, so we are accepting as criteria “fever at home”. Most become progressively more febrile

CT/CXR shows shadowing and ground glass appearance. Our radiologists call any abnormalities positive if patient is symptomatic. Note: NOT appropriate for screening even if COVID tests are limited.

Lab abnormalities: low WBC, low platelets, elevated LFTs (ie pre-eclampsia), elevated CRP. Elevated procalcitonin predicts severe respiratory disease. Viral myocarditis may elevate troponins.

Indication for admission: respiratory distress with pulse ox <90% (<92% if >20 weeks). They can look TERRIBLE with fever, body aches, coughing, vomiting but if their pulse ox sats are ok and negative CXR we send them home with Tylenol and chicken soup. Nurse or NP calls everyday to ensure no respiratory distress

ACOG/SMFM algorithm for outpatient triage <https://www.acog.org/->/media/project/acog/acogorg/files/pdfs/clinical-guidance/practice-advisory/covid-19-algorithm.pdf?la=en&hash=2D9E7F62C97F8231561616FFDCA3B1A6

**COVID Testing**

This has been a consistently difficult problem. Initially very limited with 12+ day turn around, and we ran out of swabs. Then only tested patients who were so sick they required admission (ie respiratory distress). Then could test as outpatient but required fever with symptoms and negative flu swab for all testing. Currently using clinical judgement, fever or significant viral symptoms to encourage true quarantine among positive population. 24-36 turnaround when done in-house, which started this week

Plastic swab with synthetic tip inserted deep into both nares (feels like they have breathed in pool water), oral swabs not required to save supplies, place immediately into viral transport media. Do NOT use wooden handles or cotton tips

Test follow up: we maintain an EPIC list of PUI and positive patients, list checked daily for test results and are patients called every 2-3 days to check on symptoms. Continue quarantine urged. If they report respiratory distress they are asked to come in.

Reporting: state specific, our lab automatically reports

**Clinical course**

7-10 days of “flu” (or mild symptoms, asymptomatic), then either improvement or sudden deterioration to ARDS, pneumonia, DIC, myocarditis, acute kidney, liver disease, septic shock thought due to “cytokine storm”

Reassuring but limited data re lack of vertical transmission (1 possible case?)

Reasonable to postpone delivery until end of quarantine

**Treatment**

No empiric treatment as outpatient. Patients in unit receiving hydroxychloroquine and remdesivir empirically

Treat for shock prn but otherwise conservative IV fluids

Replace electrolytes as arrhythmia seems to be a cause of death

Admitted patients treated with broad-spectrum antibiotics until clinical picture is established

No late term steroids, discuss steroids if patient preterm labor 24-34 weeks with MFM as steroids may worsen clinical picture and delay viral clearance

Continuous fetal monitoring only if maternal status would tolerate delivery, use as a “maternal vital sign”

Low pressure, low volume vent settings

No bipap, patients are electively intubated if they require >5L O2 to allow adequate PPE prior to aerosolization with intubation and extubation

Consider VTE prophylaxis

If intubated, left decubitus position

Timing and mode of delivery should not be determined by maternal COVID status

**Patient flow**: geographic separation of any patient who might be infected, minimize providers, minimize learners

COVID-19 Clinic: >20 weeks to 6 weeks postpartum non-labor complaints (ie viral symptoms, abdominal pain, N/D). Need to have ability to perform NST, bedside US, EKG and portable CXR. O2 by mask available. Precipitous delivery pack. Also space for COVID positive moms and babies who need postpartum follow-up during their quarantine period.

OB ED: > 20 weeks labor, pre-eclampsia, decreased fetal movement. We had a remarkable drop off in non-urgent visits.

Antepartum: PUI and positive patients had rooms in the far end of the hall as we did not have negative pressure rooms. Single room with dedicated bathroom, door closed

ICU: ours are full, but if we have to intubate we would plan to use one of the converted OR rooms and to be prepared to section if mother needed for adequate ventilation

Delivery: PUI and COVID positive patients should always have an over-ear mask on, providers should wear N-95s and eye shields, gowns and gloves. Nitrous use is suspended due to aerosolization. Delayed cord-clamping currently at mother’s discretion, no evidence of vertical transmission to date. We don’t allow COVID patients to labor in tub. Consider keeping other providers outside the room unless necessary, ie neonatal resuscitation personnel.

Neonatal resuscitation: consider resuscitation in an open incubator so that baby can be transported quickly, filter on O2 source? Consider nasal swab testing for baby at 24 hours of life

Postpartum: we are not able to give separate rooms for baby and mom, they are together with a portable room divider between, PPE for the baby’s caregiver and mom handwashes and wears a mask to pump. Single room with dedicated bathroom, door closed, can place 2 COVID patients together if necessary. Safely expedite postpartum stays

Breastfeeding: mothers are encouraged to give baby their milk, if mother insists on putting baby to breast should hand wash and be sure mask is secure

Office visits: patients wait in the car until the exam room is available

Drive-thru testing for COVID for employees/patients very helpful but restricted to those with fever >100.4

**Visitors**

No visitors allowed

1 support person allowed only when patient admitted to L+D and after temperature screen. That person cannot leave, should bring all the snacks and supplies they need for their entire stay. NICU allows only 1 parent/24 hours. ICU allows family 10 minutes post-mortem. It’s brutal and this is the #1 stressor for patients.

**OR**

All elective surgery postponed including office-based procedures that could become OR cases ie Leep

COVID positive gyn patients recovered in OR to prevent contaminating recovery area

COVID positive patients post spinal recovered in their postpartum rooms

Robot ORs turned into ICU overflow

**Discharge instructions**

Inform close contacts, reassure re low incidence of vertical transmission

Quarantine as recommended by state

Timelines for quarantine vary: 2 negative tests 24 hours apart (we cannot get even sick people tested so this is moot), 3 days with no fever (off antipyretics), 7 days from symptom onset

**Security**

Hospital entrances limited to 2, one for employees and one for patients

All who enter hospital screened with temperature check and given over-ear mask

2 people per elevator, stair strongly encouraged

Secure all PPE **early on**

Bags of all departing patients and staff are checked to be sure PPE does not leave the premises

**Ob/Gyn Hospitalist support**

Humane schedule that allows adequate rest

Clear back up plan so that no one “works sick”, conservative plan for return to work, plan for isolating sick provider from their family prn

Pregnant providers working as usual, Stanford suggests no COVID patients after 37 weeks to ensure provider’s delivery not complicated by COVID

Include COVID tips in daily hand-off

Wipe down call room between providers/remove sheets and blankets

Single serving snacks and drinks ONLY

Hospital organized daily food trucks to stop by, much appreciated!

Outdoor exercise is a lifesaver!

**Resources**

CDC.gov for everything COVID!

CDC Coronavirus Self-Checker to reassure patients with mild symptoms that they do not need to be seen: https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/testing.html

SMFM: <https://education.smfm.org/products/covid-19-in-pregnancy-preparing-your->obstetrical-units

CMQCC: h<ttps://www.cmqcc.org/news/webinar-recording-preparing-your-maternal-and-neonatal-units-r>espond-covid-19

ACOG: <https://www.acog.org/clinical/clinical-guidance/practice-advisory/articles/2020/03/novel-coronavirus-2019>