

Practical Guidance for Treating Pregnant Persons With COVID-19 in Resource-Limited Settings: Early Lessons From the US Epidemic

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As the COVID-19 epidemic has evolved rapidly in the United States, many lessons have been learned that can be translated to other settings. As much as clinicians desire to base medical decision-making on evidence, COVID-19 has required us to rely on clinical judgment and shared experience in cases where experimental clinical evidence does not exist. The purpose of this document is to summarize early lessons learned from the US experience that might help obstetricians in resource-limited settings as they prepare for the COVID-19 epidemic.

Protecting Health Care Workers

1. Health care workers are our most vital asset, and they must be protected with the proper personal protective equipment (PPE).
2. A single person should be designated to screen patients for COVID-19 symptoms before entry into the health care facility establishment or upon arrival.
3. While not completely understood, transmission is suspected to primarily occur via droplets. Routine surgical masks are protective. N95 masks provide additional protection against aerosols (eg, during intubations), but it is unclear whether spontaneous vaginal delivery is an aerosol-generating event. If available, an N95 mask is encouraged when caring for COVID-19 patients, particularly those in the second stage of labor. N95s can be reused from patient to patient as long as they are not soiled and the seal is not broken.
4. PPE must be used properly to be effective. Removing PPE after treating patients with COVID-19 is the time when most health care workers are most vulnerable. Rounding on all COVID-19 patients prior to removal can help decrease the risk of self-contamination. Demonstrations on how to properly use PPE are available (<https://www.youtube.com/watch?v=PQxOc13DxvQ>).

5. If masks are not available, a face shield should be worn. Face shields can significantly decrease the spread of the virus and can be made with readily available materials (<https://www.youtube.com/watch?v=pRTTjCkuDUM>).
6. Masking patients (even with cloth masks) in addition to health care workers can help decrease transmission to other patients and to providers on busy labor wards. Cloth masks can be reused and washed at the end of the day. Soap and hot water (> 140 °F) kills the virus (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7185834/pdf/nn0c03252.pdf>).
7. Set up handwashing stations. The World Health Organization (WHO) has a recipe for hand sanitizer with glycerol and alcohol (https://www.who.int/gpsc/5may/Guide_to_Local_Production.pdf).
8. Brainstorm ways to reduce group rounds on the labor ward but still maintain quality care. Restrict family members or visitors to your facility unless needed for communication or interpretation.
9. Strict attention to frequent surface decontamination is vital. Reminders such as an hourly timer to wipe all surfaces clean have worked in some hospitals.
10. The COVID-19 polymerase chain reaction test has varying rates of false-negative results depending on the test used. Consider treating symptomatic patients as positive with appropriate PPE.

In summary, hand washing, surface decontamination, and masking are essential!

Treating Symptomatic Pregnant Individuals With COVID-19

1. If possible, admitted pregnant patients who are positive for COVID-19 should be isolated from other patients. Consider designating a team of trained and experienced clinicians to treat pregnant patients with COVID-19, which will also serve to minimize PPE use.
2. Pulse oximetry is the best way to monitor oxygen status. The oxygen saturation goal in pregnancy is greater than 95%. A nasal cannula can deliver up to 15 L of oxygen per minute. The degree of hypoxia may not correlate with symptoms. Often, hypoxia is worse than clinical symptoms might suggest.
3. Allowing a pregnant person to sleep prone at night seems to increase oxygenation and may avoid intubation. Pillows may be needed to for positioning. In the daytime, sitting upright may also help with oxygenation.

4. COVID-19 can mimic other diseases in pregnancy, such as preeclampsia (particularly if it presents with atypical features), HELLP syndrome, and diabetic ketoacidosis. Thrombocytopenia and transaminitis are not uncommon in pregnant persons with COVID-19.
5. Although there are no proven treatments for COVID-19, consider giving pregnant patients the same supportive treatments that are available to nonpregnant patients.
6. It is reasonable to treat symptomatic pregnant individuals admitted with COVID-19 with antibiotics for pneumonia, avoiding quinolones if possible.
7. Antenatal steroids should be administered to pregnant persons with COVID-19 with active respiratory symptoms only if the gestational age is less than 34 weeks and the gestational age is well established. Steroids may adversely affect maternal status.
8. Anticoagulation to prevent venous thromboembolism should be considered for patients whose clinical condition is poor, who require hospitalization, or who are in intensive care. Admitted pregnant patients with COVID-19 may also be at an increased risk of stroke and myocardial infarction.
9. In general, maternal COVID-19 infection is not an indication for delivery or a cesarean delivery.
10. Decisions regarding skin-to-skin contact and breastfeeding after delivery should be made on an individual basis. The WHO and Centers for Disease Control and Prevention recommend breastfeeding for those who desire to do so. While breastfeeding, persons who are positive for COVID-19 should be encouraged to wash hands frequently and wear a mask.