

WELCOME to the

*Planning and Clinical Management of Perinatal  
COVID-19 cases*

Session will start in less than 15 minutes



NNEPQIN ECHO  
COVID -19  
April 4/16/2020  
Session 2



# Learning objective

- Familiarity with course of the disease
- Plan for communication between inpatient and outpatient care
- Impact of illness on delivery management

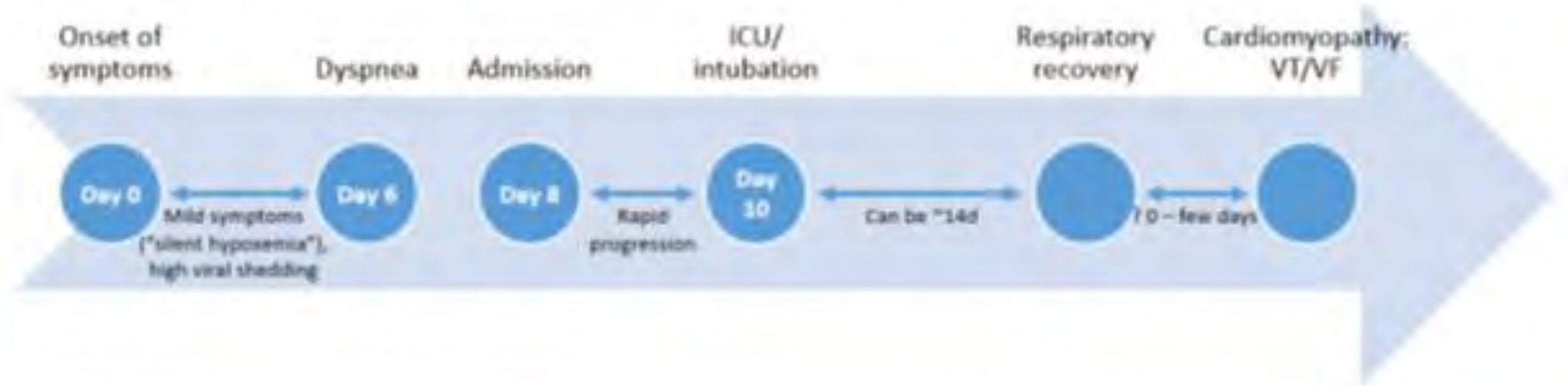


# Pertinent physiology

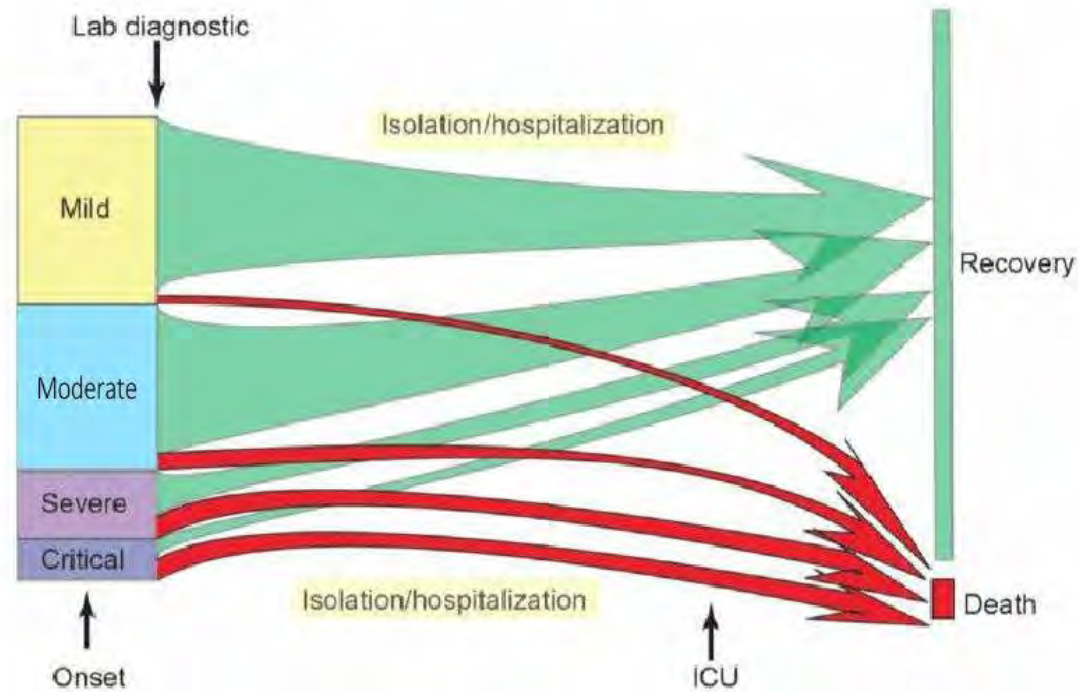
- Marked decrease in functional residual capacity
- Rapid hypoxia with apnea
- ABG respiratory alkalosis with a compensatory metabolic acidosis  
HCO<sub>3</sub> 18-22 mmol/l.  
PCO<sub>2</sub> is 27-32 mmol/l  
pH is 7.40-7.44
- What would be a normal PCO<sub>2</sub> in a non pregnant adult predicts impending respiratory arrest.



# Expected course of COVID - 19



# Spectrum of Covid 19



**Figure 5. Pattern of disease progression for COVID-19 in China**

Note: the relative size of the boxes for disease severity and outcome reflect the proportion of cases reported as of 20 February 2020. The size of the arrows indicates the proportion of cases who recovered or died. Disease definitions are described above. Moderate cases have a mild form of pneumonia.

# Expected course of COVID - 19

- 80% are mild and few will be peripartum
- Initially mild, then can have acute worsening (ICU admission ~10 days after onset of symptoms)
- “Cytokine storm”
  - ARDS
  - Cardiogenic shock
- Deterioration can be rapid.





# Decision making around admission/evaluation

- ACOG SMFM risk assessment tool
  - <https://www.acog.org/-/media/project/acog/acogorg/files/pdfs/clinical-guidance/practice-advisory/covid-19-algorithm.pdf>
  - Careful assessment of risk factors
  - Assessment of severity of illness
  - Need to decide where evaluation will be done



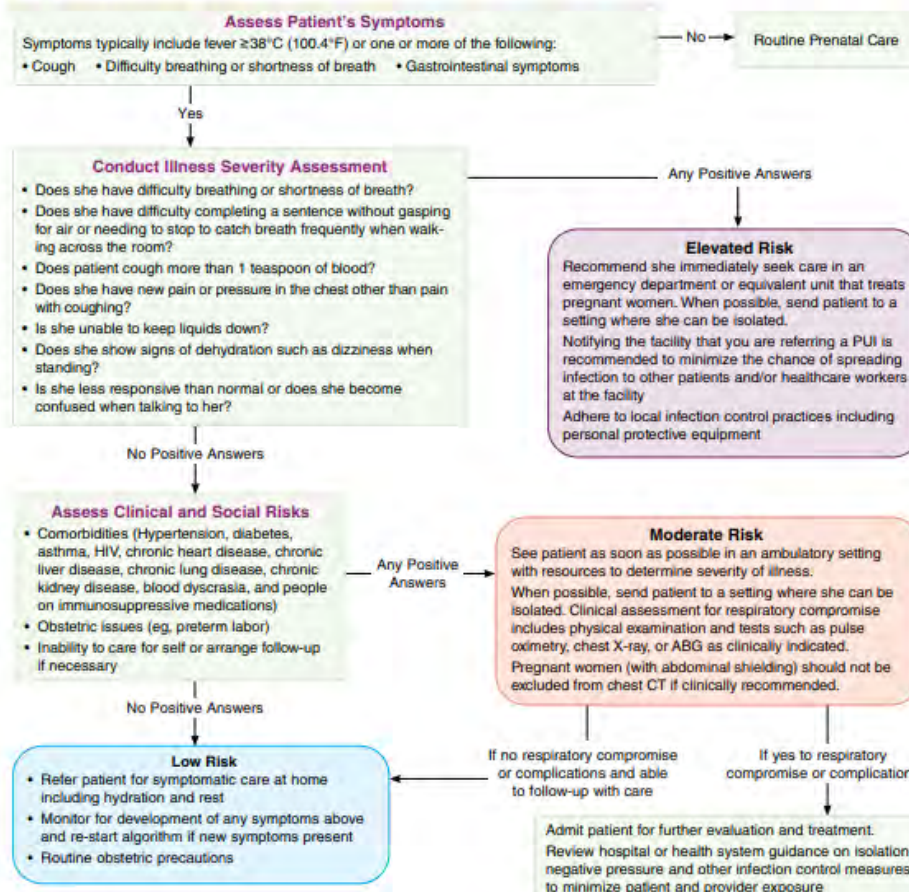


### Outpatient Assessment and Management for Pregnant Women With Suspected or Confirmed Novel Coronavirus (COVID-19)

Unlike influenza and other respiratory illnesses, based on a limited number of confirmed COVID-19 cases, pregnant women do not appear to be at increased risk for severe disease. However, given the lack of data and experience with other coronaviruses such as SARS-CoV and MERS-CoV, diligence in evaluating and treating pregnant women is warranted.

This algorithm is designed to aid practitioners in promptly evaluating and treating pregnant persons with known exposure and/or those with symptoms consistent with COVID-19 (persons under investigation [PUI]). If influenza viruses are still circulating, influenza may be a cause of respiratory symptoms and practitioners are encouraged to use the [ACOG/SMFM influenza algorithm](#) to assess need for influenza treatment or prophylaxis.

**Please be advised that COVID-19 is a rapidly evolving situation and this guidance may become out-of-date as new information on COVID-19 in pregnant women becomes available from the Centers for Disease Control and Prevention (CDC).** <https://www.cdc.gov/coronavirus/2019-nCoV/index.html>



# Coordination with labor unit

- Situational awareness of all sick OB patients in the community
  - Communicate with labor and delivery
- Education patient not to present to L&D unannounced
- Establish criteria for where women are admitted
  - Admission for respiratory illness
  - Admission for obstetrical care
  - Admission for postpartum



# Standard admission criteria

- Tachypnea
- Hypoxia on room air or ambulating <94%
- Severe criteria (severe dyspnea, hemoptysis)
- Take comorbidity into consideration
- Persistent fever/lack of improvement
- Dehydration

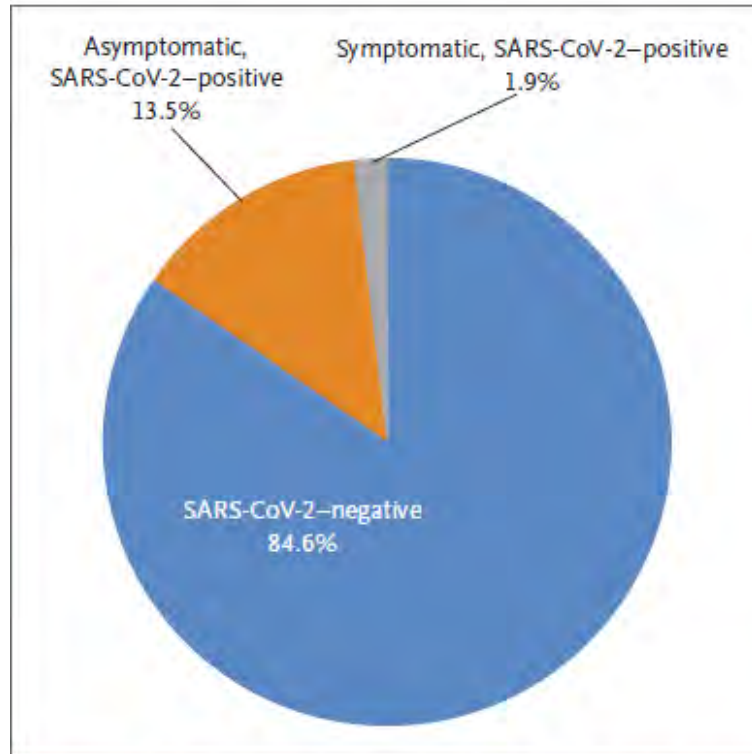


# Admission issues

- Lower threshold for admission if symptomatic in the third trimester?
  - Use risk factors to guide
  - Not more likely to get sick
  - Logistics of possible need to deliver
- ? COVID testing all symptomatic obstetrics patients regardless of illness severity
- ??? COVID testing for all obstetrics patients
  - Prior to a procedure
  - On admission for birth



# NEJM 4/14/2020



**Figure 1.** Symptom Status and SARS-CoV-2 Test Results among 215 Obstetrical Patients Presenting for Delivery.

- Large NYC hospitals during surge
- 29/33 test positive were asymptomatic
  - 1/29 became symptomatic during stay
- 1 test negative patient became ill and had positive screen 3 days later
- Could be more false negatives



# Decision to screen with PCR testing

- Prevalence
- Test equipment availability and cost
- Turn around time
- PPE supplies
- Test performance statistics
- Trap of considering negative test = uninfected



# Delivery decision making

- COVID-19 is not an absolute indication for ending the pregnancy.
- Expediting of delivery should be evaluated on a case by case basis, considering:
  - Maternal status, disease course and anticipated progression:
  - Severity peaks in the 2nd week, which should be taken into account.
  - In contrast to other respiratory illnesses in pregnancy, there is emerging evidence of improvement in maternal respiratory status following delivery.
  - Gestational age
  - Fetal status





# Delivery decision making

- Do not delay obstetric indications for early delivery (e.g. previa, severe preeclampsia)
- Tocolysis likely not appropriate
- If infection of COVID-19 not improved by ‘treatment,’ early delivery should be considered even in the absence of obstetric indications
- Delivery may make care easier (prone ventilation, passive hypercapnia)
- ? 3rd trimester COVID-19 as indication for delivery in the late preterm or early term period
- ? Delivery after 32-34 weeks may be beneficial to the subsequent treatment and safety of these patients depending on clinical status.



# Labor management

- Published series majority are cesarean
- Vaginal delivery facilitates recovery and discharge
- Threshold for cesarean lowered “VBAC management”
- Low tolerance for protracted labor, non reassuring fetal testing
  - Compromise of team and patient for any emergent delivery given PPE considerations),
- Early epidural
- FSE, amniotomy, OVD – no restriction



# Intrapartum issues

- Intense attention to vital signs rapid deterioration
  - Oxygen requirement/O2sat
  - Worsening tachycardia (anecdotally common)
  - Tachypnea
- Communicate with: anesthesia, critical care, OR
- Temps of support people
- Healthcare proxy



# Preterm management

- No late preterm steroids or rescue course of betamethasone
  - Mod / severe disease no steroids after 32 weeks
- Probably no tocolysis
- No magnesium for neuroprotection for mod/severe illness after 28 weeks. Use 4 gram load and 1 gram/hour infusion
- No magnesium for seizure prophylaxis with mod-severe illness



# Management of cardiac arrest

- Interim AHA Guidelines for Life Support for Adults and Neonates with suspected or confirmed COVID
- The tenets of maternal cardiac arrest are unchanged for women with suspected or confirmed COVID-19. ● The cardiopulmonary physiological changes of pregnancy may increase the risk of acute decompensation in critically ill pregnant patients with COVID-19. ● Preparation for perimortem delivery, to occur after 4 minutes of resuscitation, should be initiated early in the resuscitation algorithm to allow the assembly of obstetrical and neonatal teams with PPE even if ROSC is achieved and perimortem delivery is not required.



# Discontinue isolation

- **Test-based Strategy**

- Resolution of fever without the use of fever-reducing medications **and**
- Improvement in respiratory symptoms (eg, cough, shortness of breath) **and**
- Negative results of an FDA Emergency Use Authorized COVID-19 molecular assay for detection of SARS-CoV-2 RNA from at least two consecutive nasopharyngeal swab specimens collected 24 hours or greater apart (total of two negative specimens).

- **Nontest-based Strategy**

- At least three days (72 hours) have passed since recovery defined as resolution of fever without the use of fever-reducing medications and improvement in respiratory symptoms (eg, cough, shortness of breath) **and**
- At least seven days have passed since symptoms first appeared





# HCW return to work

- *Test-based strategy.* Exclude from work until
  - Resolution of fever without the use of fever-reducing medications **and**
  - Improvement in respiratory symptoms (e.g., cough, shortness of breath), **and**
  - Negative results of an FDA Emergency Use Authorized molecular assay for COVID-19 from at least two consecutive nasopharyngeal swab specimens collected  $\geq 24$  hours apart (total of two negative specimens)
- *Non-test-based strategy.* Exclude from work until
  - At least 3 days (72 hours) have passed *since recovery* defined as resolution of fever without the use of fever-reducing medications **and** improvement in respiratory symptoms (e.g., cough, shortness of breath); **and**,
  - At least 7 days have passed *since symptoms first appeared*
- If HCP were never tested for COVID-19 but have an alternate diagnosis (e.g., tested positive for influenza), criteria for return to work should be based on that diagnosis.





# HCW return to work

- Wear a facemask at all times while in the healthcare facility until all symptoms are completely resolved or until 14 days after illness onset, whichever is longer
- Be restricted from contact with severely immunocompromised patients (e.g., transplant, hematology-oncology) until 14 days after illness onset
- Adhere to hand hygiene, respiratory hygiene, and cough etiquette in [CDC's interim infection control guidance](#) (e.g., cover nose and mouth when coughing or sneezing, dispose of tissues in waste receptacles)
- Self-monitor for symptoms, and seek re-evaluation from occupational health if respiratory symptoms recur or worsen



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# References

- <https://www.acog.org/-/media/project/acog/acogorg/files/pdfs/clinical-guidance/practice-advisory/covid-19-algorithm.pdf>
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- <https://www.cdc.gov/coronavirus/2019-ncov/hcp/inpatient-obstetric-healthcare-guidance.html>
- 
- <https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-in-home-patients.html>
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- <https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-home-care.html>
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- <https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html>
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