Florida Perinatal Quality Collaborative Webinar Series

Obstetric Care During COVID-19

August 4, 2020
12:00-1:15 PM ET

Welcome!

PLEASE ENTER YOUR AUDIO PIN ON YOUR PHONE SO WE ARE ABLE TO UN-MUTE YOU FOR DISCUSSION.

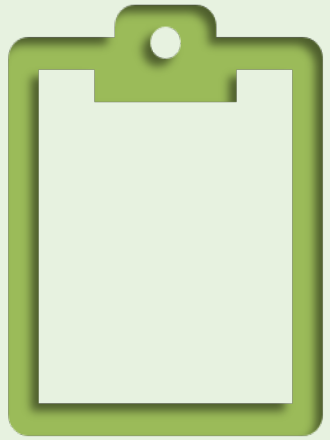
IF YOU HAVE A QUESTION, PLEASE ENTER IT IN THE QUESTION BOX OR RAISE YOUR HAND TO BE UN-MUTED.

Q&A WILL BE HELD AT THE END OF THE WEBINAR!

FPQC

Welcome!

THIS WEBINAR IS BEING RECORDED.



PLEASE PROVIDE FEEDBACK ON OUR POST-WEBINAR SURVEY.

Upcoming FPQC Webinar:
Neonatal Care During COVID-19
8/13/2020 1-2:15 PM ET

REGISTER AT FPQC.ORG/COVID19

Jonathan Levin, MD
Harvard

Karen Puopolo, MD, PhD
UPenn

Mark Hudak, MD
UF Jacksonville

FPQC

Judette Louis, MD, MPH

Chair, College of Medicine Obstetrics & Gynecology

Associate Professor, USF Colleges of Medicine and Public Health

President, Society for Maternal-Fetal Medicine

Clinical Lead, Florida Perinatal Quality Collaborative

Learning Objectives

- Share approaches for the management of Suspected and Confirmed COVID-19 infection in pregnant women
- Highlight treatment strategies for moderate to severe COVID-19 infection in pregnant women
- Gauge the effectiveness of various strategies for testing and operations management of the pandemic in hospitals

FPQC

Vision

"All of Florida's mothers and infants will have the best health outcomes possible through receiving high quality evidence-based perinatal care."

Values

- Data-Driven
- Voluntary
- Population-Based
- Evidence-Based
- Value Added

FPQC Partners & Funders

Florida HEALTH

CDC
Centers for Disease Control and Prevention

Agency for Health Care Administration

Alliance for Innovation on Maternal Health AIM

USF HEALTH

The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

AWHONN
FLORIDA
PROMOTING THE HEALTH OF WOMEN AND NEWBORNS

Florida Affiliate of the American College of Nurse-Midwives
With women, for a lifetime®

Florida Association of Healthy Start Coalitions, Inc.
Every baby deserves a healthy start

Florida Academy of Family Physicians
Support Florida's Family Physicians

March of Dimes

Florida Blue

Florida Hospital Association
Mission to Care. Vision to Lead.

Preeclampsia Foundation

Florida Alliance for Healthcare Value

Florida Society of Neonatologists
Advancing the Care of Neonates in the Sunshine State

FPQC

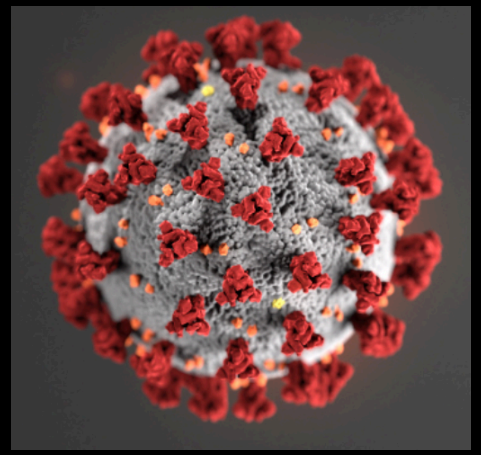
About the Presenters

Dena Goffman, MD

Chief of Obstetrics, Sloan Hospital for Women

Associate Chief Quality Officer, Obstetrics

New York-Presbyterian



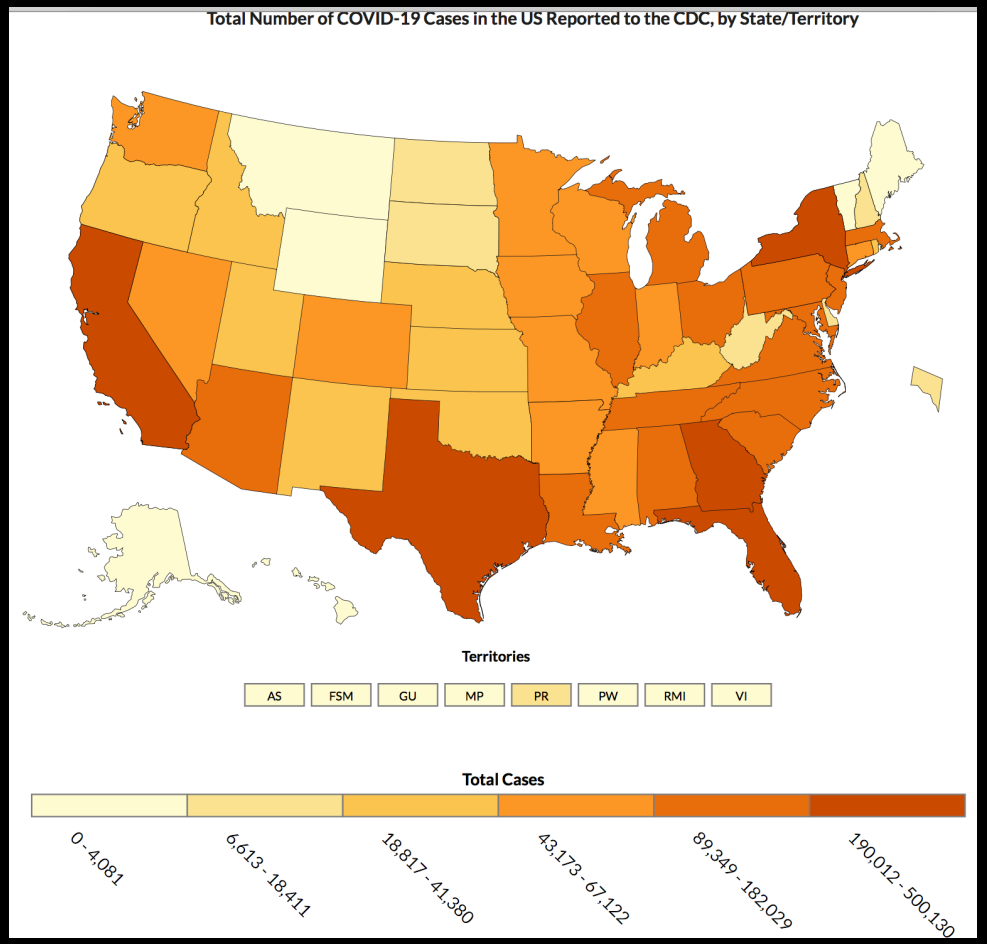
Obstetric Care During COVID-19
Florida Perinatal Quality Collaborative

Dena Goffman, MD
Chief of Obstetrics, Sloane Hospital for Women
Associate Chief Quality Officer, Obstetrics, NewYork-Presbyterian Hospital
Associate Professor of Women's Health in Obstetrics and Gynecology, Columbia University Irving Medical Center

COLUMBIA | OBSTETRICS AND GYNECOLOGY

Background

- SARS-CoV-2
  - emerged Wuhan, China in December 2019
  - virus responsible for COVID-19 infection
- First case COVID-19 in U.S. January 21, 2020
- Declared pandemic by WHO March 2020
- CDC COVID Data Tracker (As of Sunday night)
  - 4,601,526 Total Cases
  - 154,002 Total Deaths
  - 1,404 Cases Per 100,000 People

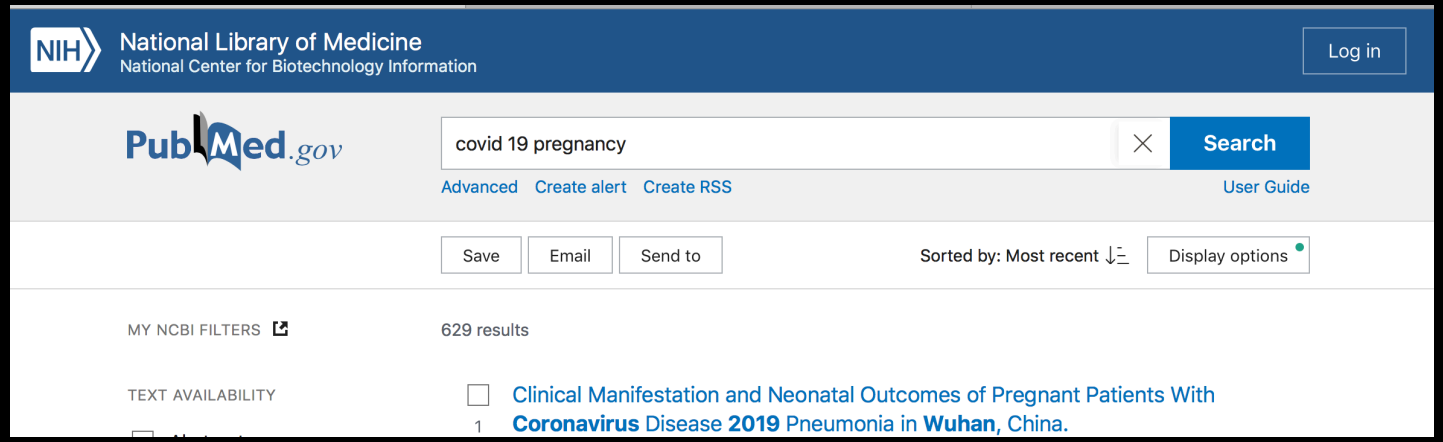


When we Started…

- Two peer-reviewed publications from China with 18 women
  - No evidence of vertical transmission
  - Mostly cesarean delivery
  - Limited outcome data

- WHO Report from China of 147 pregnant women with COVID-19 (65 confirmed)
  - 8% severe disease (tachypnea and hypoxia)
  - 1% critical illness

Where we are now…



COLUMBIA | OBSTETRICS AND GYNECOLOGY

Case 1

- 38 yo G3P2002 admitted on 3/19/20 for IOL at 37wks for poorly controlled T2DM and cholestasis c/b chorio (101.3F)
  - Afebrile with VS on admission wnl
- Intrapartum patient had a febrile temperature 38.5C (101.3F)
- Cesarean delivery for arrest of descent and at hysterotomy closure noted to have uterine atony with 1.5L EBL → intubated for maternal instability
- 1 minute after intubation patient had severe bronchospasm

Case 1

- SARS-CoV-2 PCR resulted as positive
- Intraoperative CXR - ill-defined hazy opacities in the RLL and left basilar atelectasis
- Admitted to SICU, started on hydroxychloroquine and extubated 8 hours after admission
- Discharged on PPD#4 with telehealth follow up
- Neonate negative on PCR at DOL 1

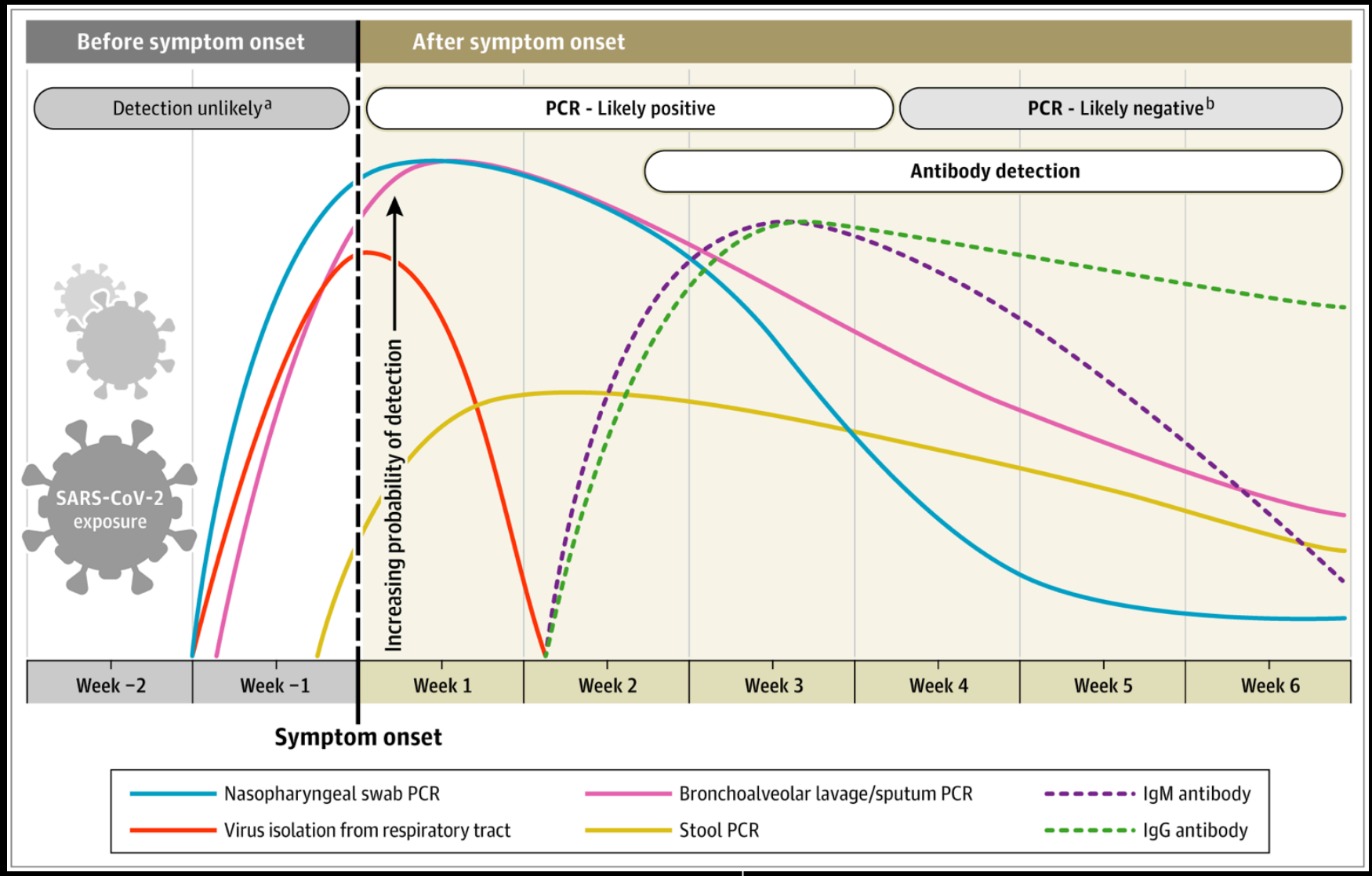
Case 2

- 33 yo G5P2022 admitted on 3/18/20 for IOL at 37 for chronic hypertension and T2DM
- PMH: Mild-intermittent asthma
- Cesarean delivery for failed induction
- On POD1 the patient developed a cough and fever that progressed to respiratory distress (dyspnea and diaphoretic)
  - 39.4 C (102.9 F) HR 130, 88% O2
  - CXR: mild pulmonary vascular congestion with no consolidation or effusion

Case 2

- SARS-CoV-2 PCR resulted as positive and hydroxychlorquine started
- Patient had severe blood pressures requiring nicardipine IV drip → ICU
- On POD2 patient was weaned off nicardipine and transferred from ICU to postpartum
- Postpartum course c/b AKI and microangiopathic hemolytic anemia
- Discharged home on POD 19

Estimated Variation Over Time in Diagnostic Tests for Detection of SARS-CoV-2 Infection Relative to Symptom Onset



Sethuraman N, Jeremiah SS, Ryo A. Interpreting Diagnostic Tests for SARS-CoV-2. *JAMA*. Published online May 06, 2020. doi:10.1001/jama.2020.8259

The NEW ENGLAND JOURNAL of MEDICINE

CORRESPONDENCE

Universal Screening for SARS-CoV-2 in Women Admitted for Delivery

March 22nd - April 4th, 2020:

- 214 women tested with RT-PCR
  - 33 SARS-CoV-2 positive
    - 4 symptomatic
    - 29 asymptomatic on admission
      - 3 developed fever
        - 2 treated for entometritis
        - 1 presumed due to COVID alone
- Overall <u>15.4% of patients positive</u> with <u>87.9% of them asymptomatic</u>

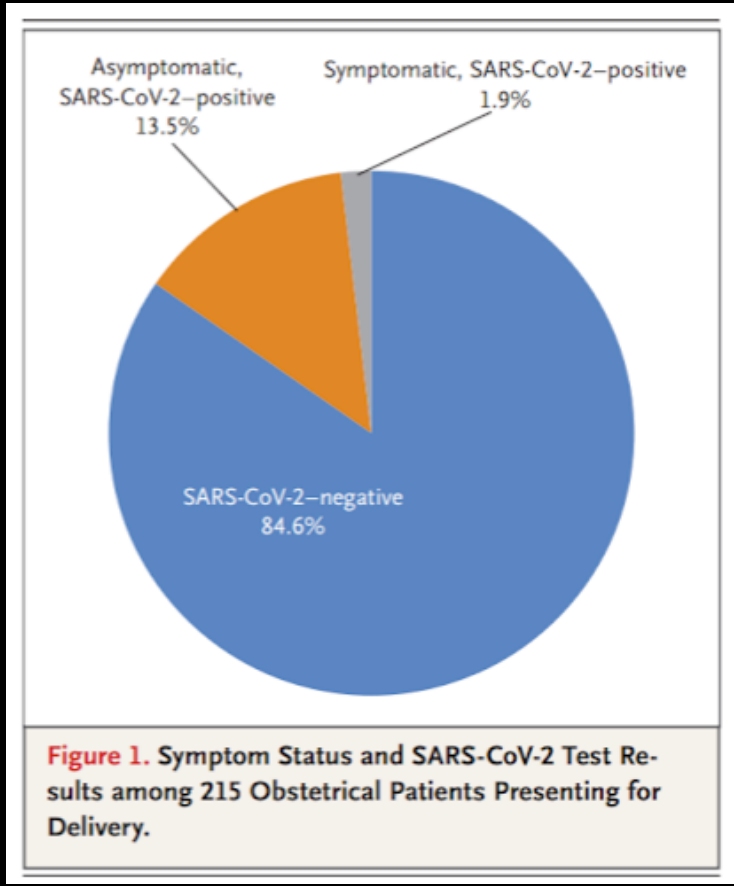
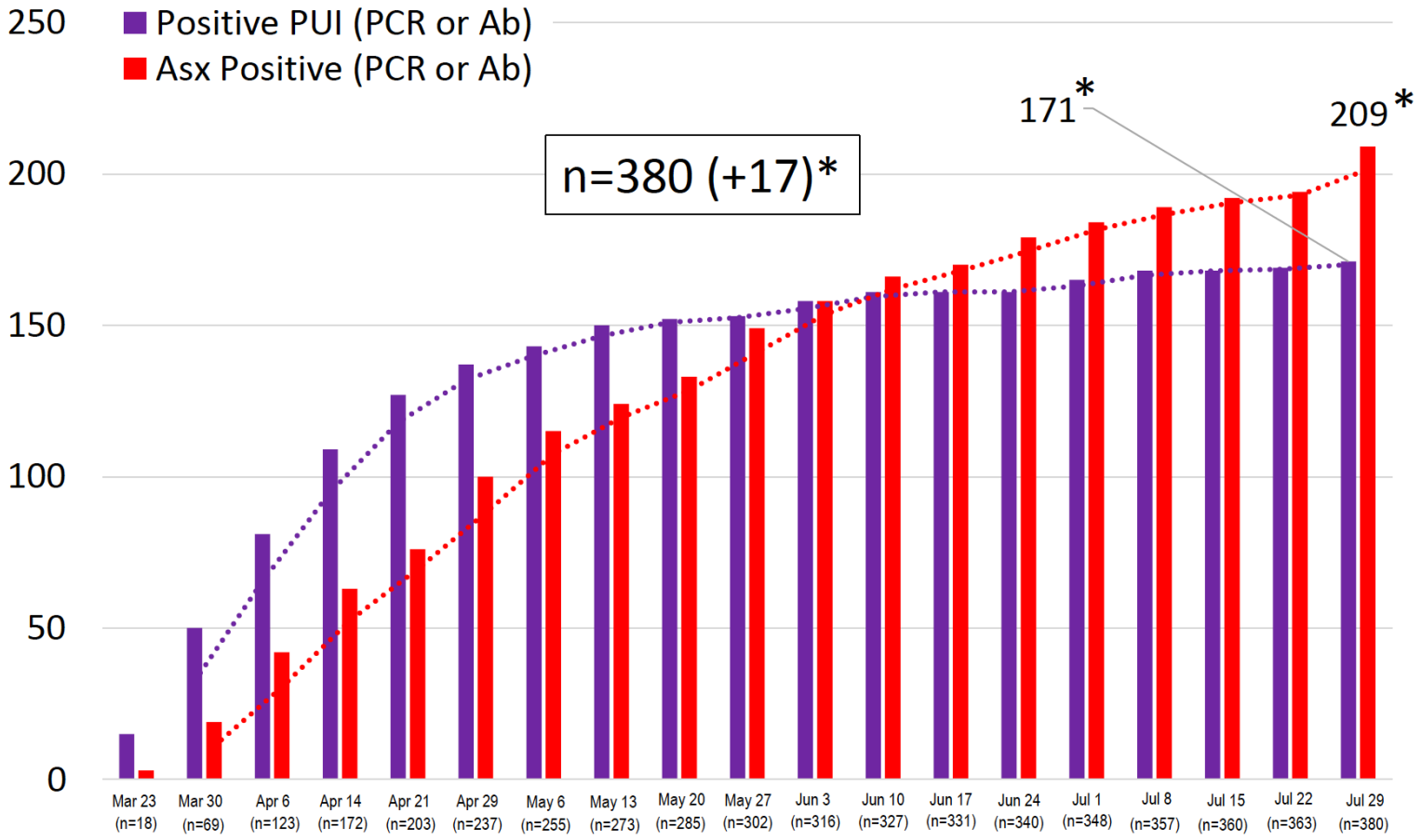


Figure 1. Symptom Status and SARS-CoV-2 Test Results among 215 Obstetrical Patients Presenting for Delivery.

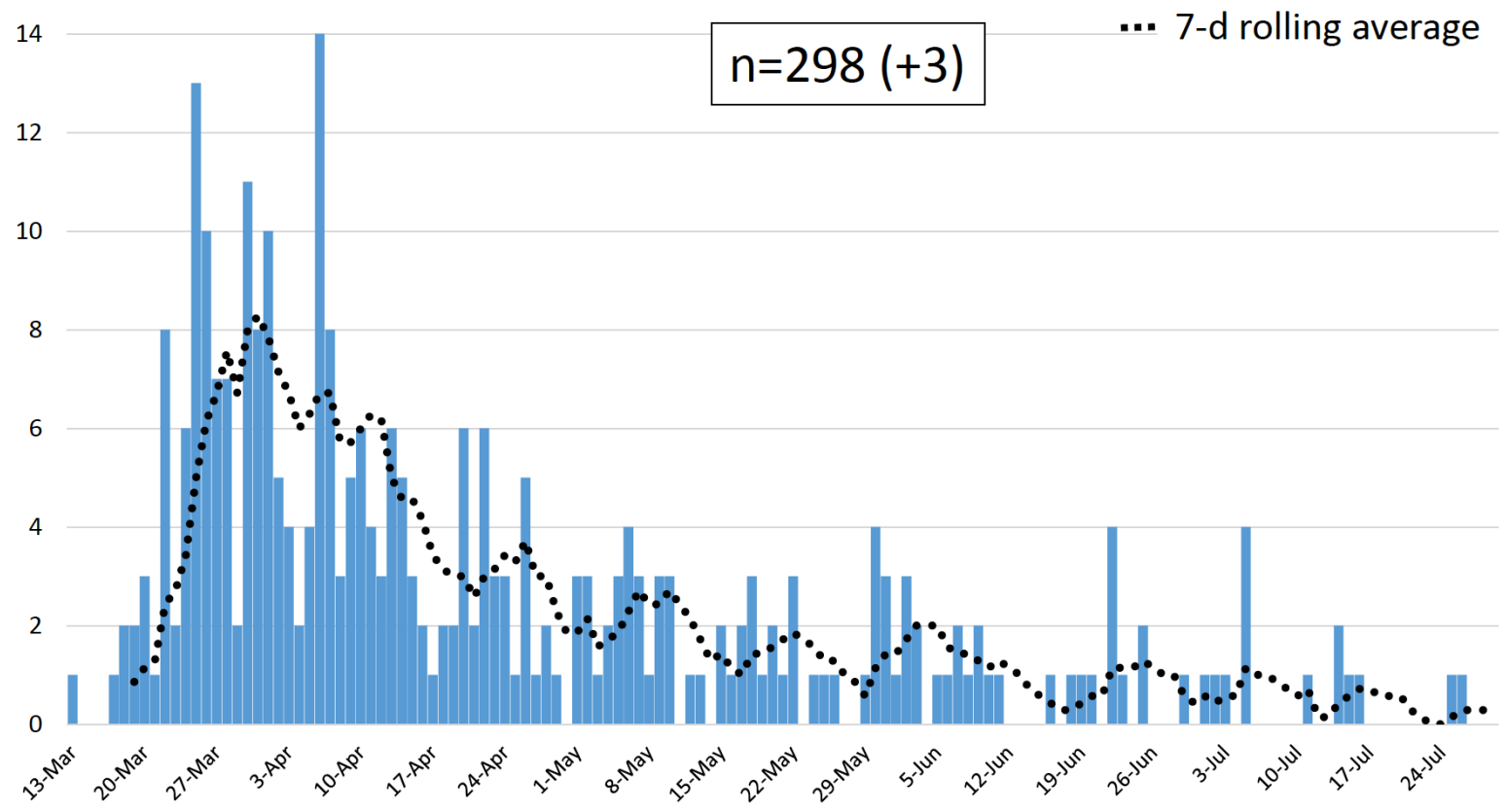
Sutton, D, Fuch, K, D'Alton, M, Goffman, D. NEJM April 2020

Total SARS-COV2 Positives: West Campus OVERALL

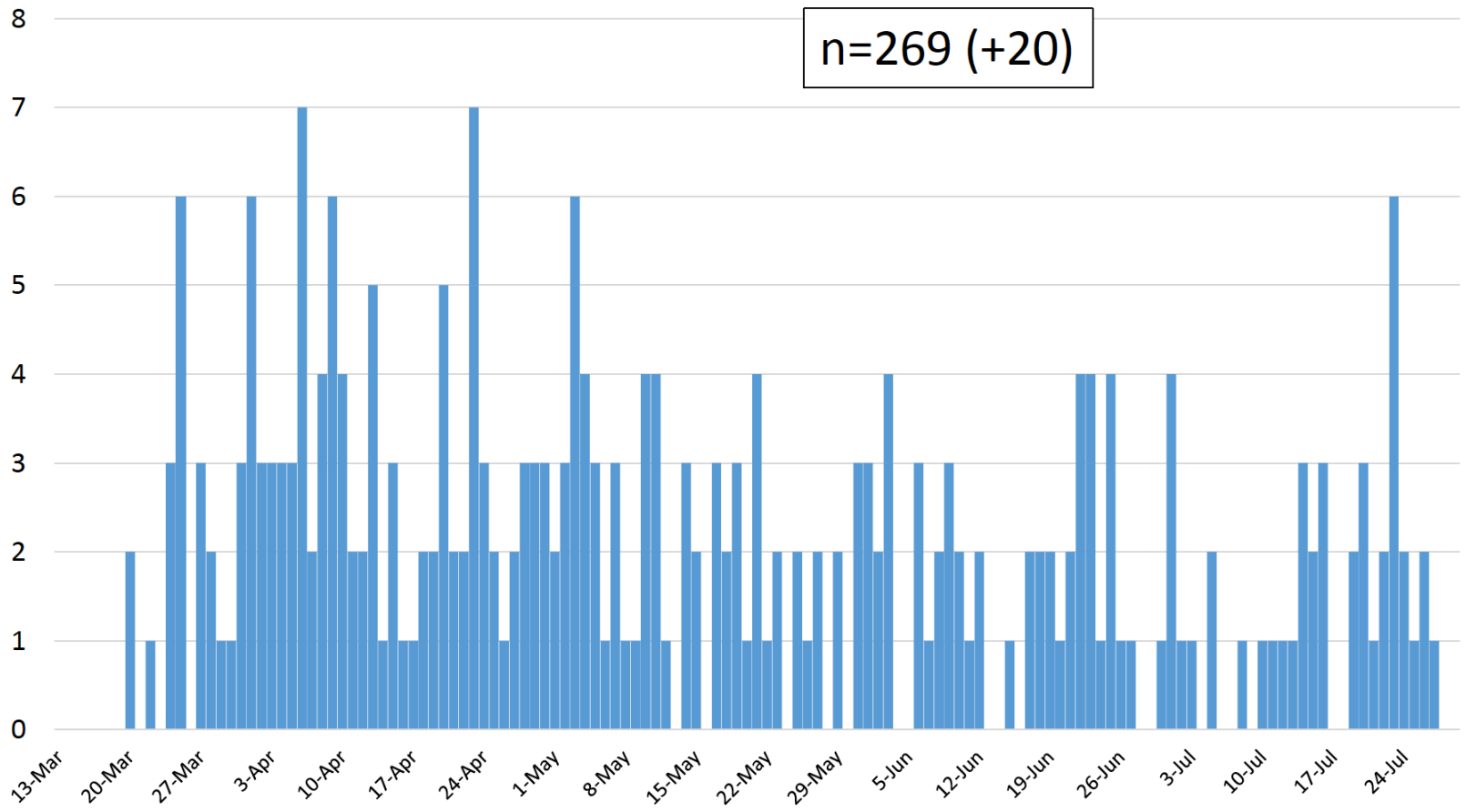


***Serology pilot began 7/20**

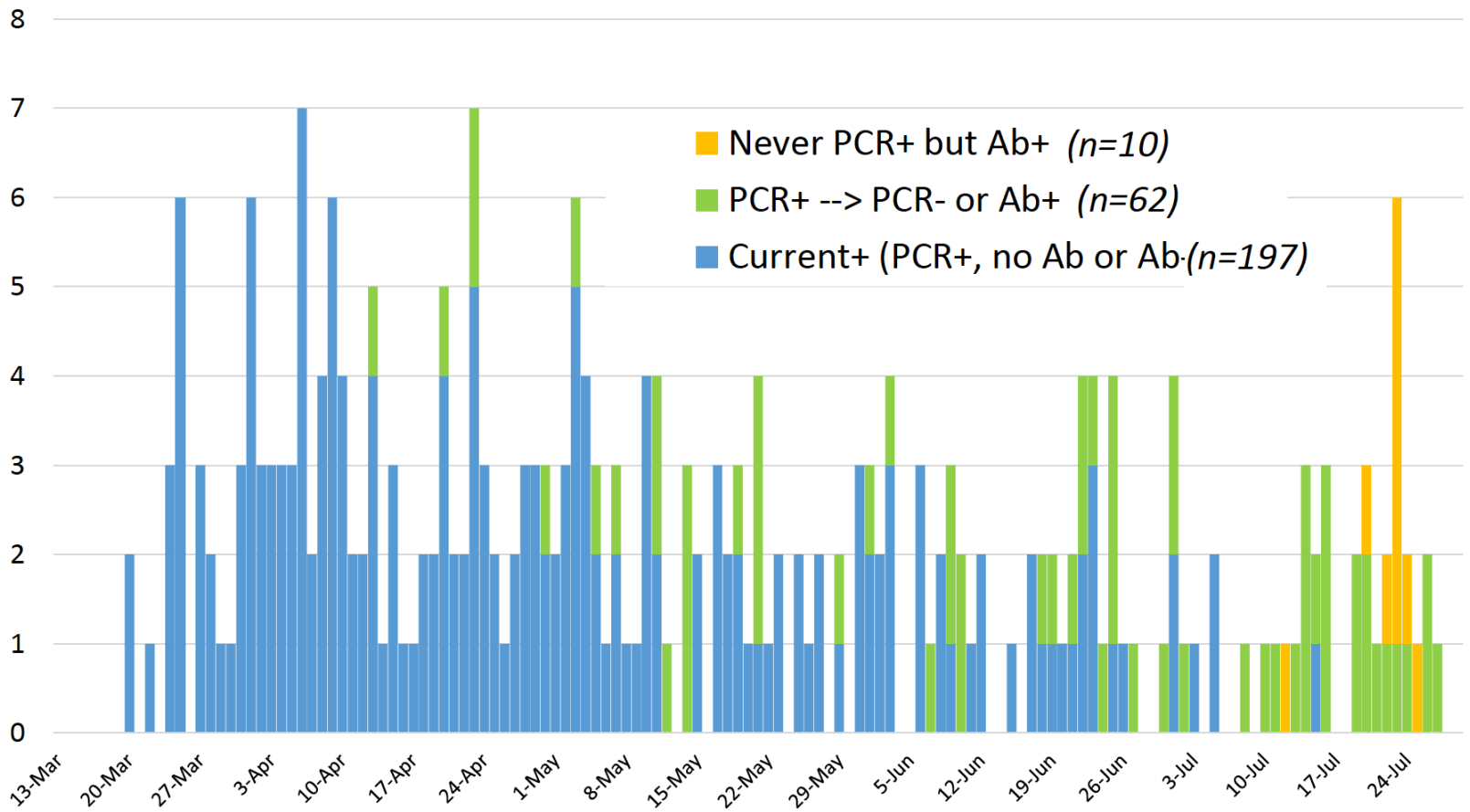
MSCH / Allen:
Initial Positive PCR by Date



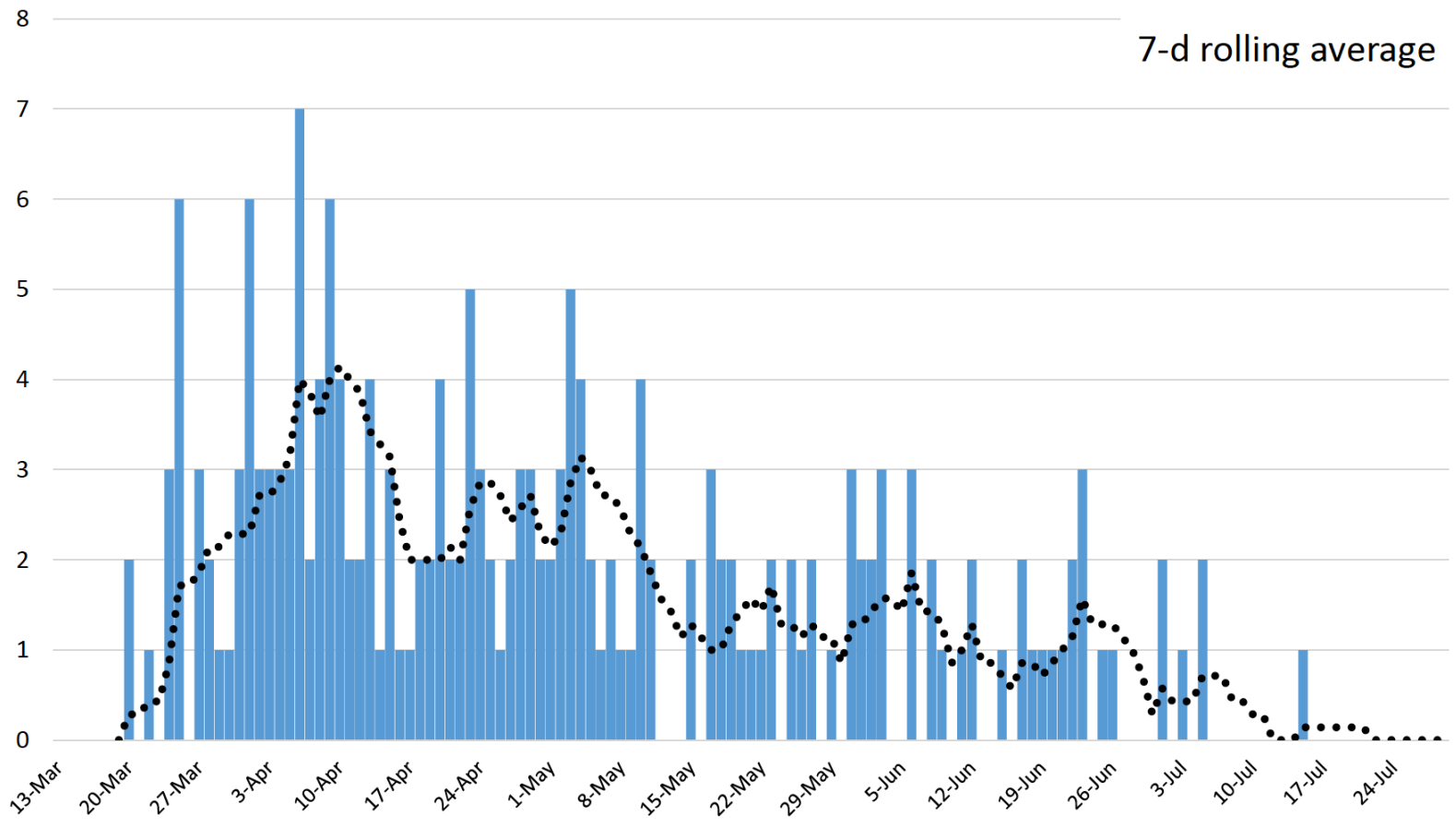
MSCH / Allen:
Ever-Positive Deliveries by Date



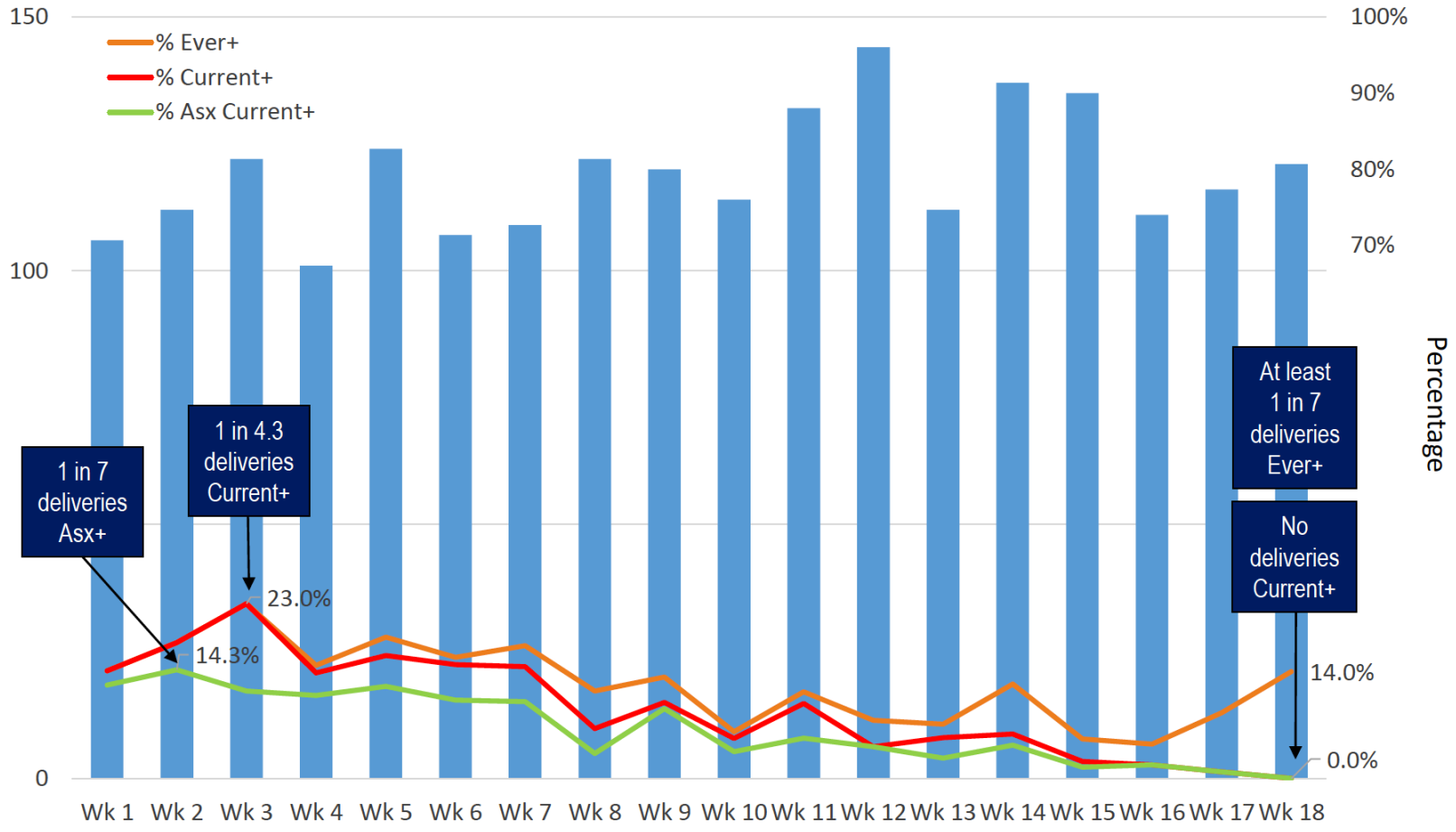
MSCH / Allen:
Ever-Positive Deliveries by Date



MSCH / Allen:
Current-Positive Deliveries by Date



Universal Testing:
MSCH / Allen Deliveries 3/22 – 7/25



Visitor Guidelines

HEALTHCARE WORKERS

Management of Visitors to Healthcare Facilities in the Context of COVID-19: Non-US Healthcare Settings

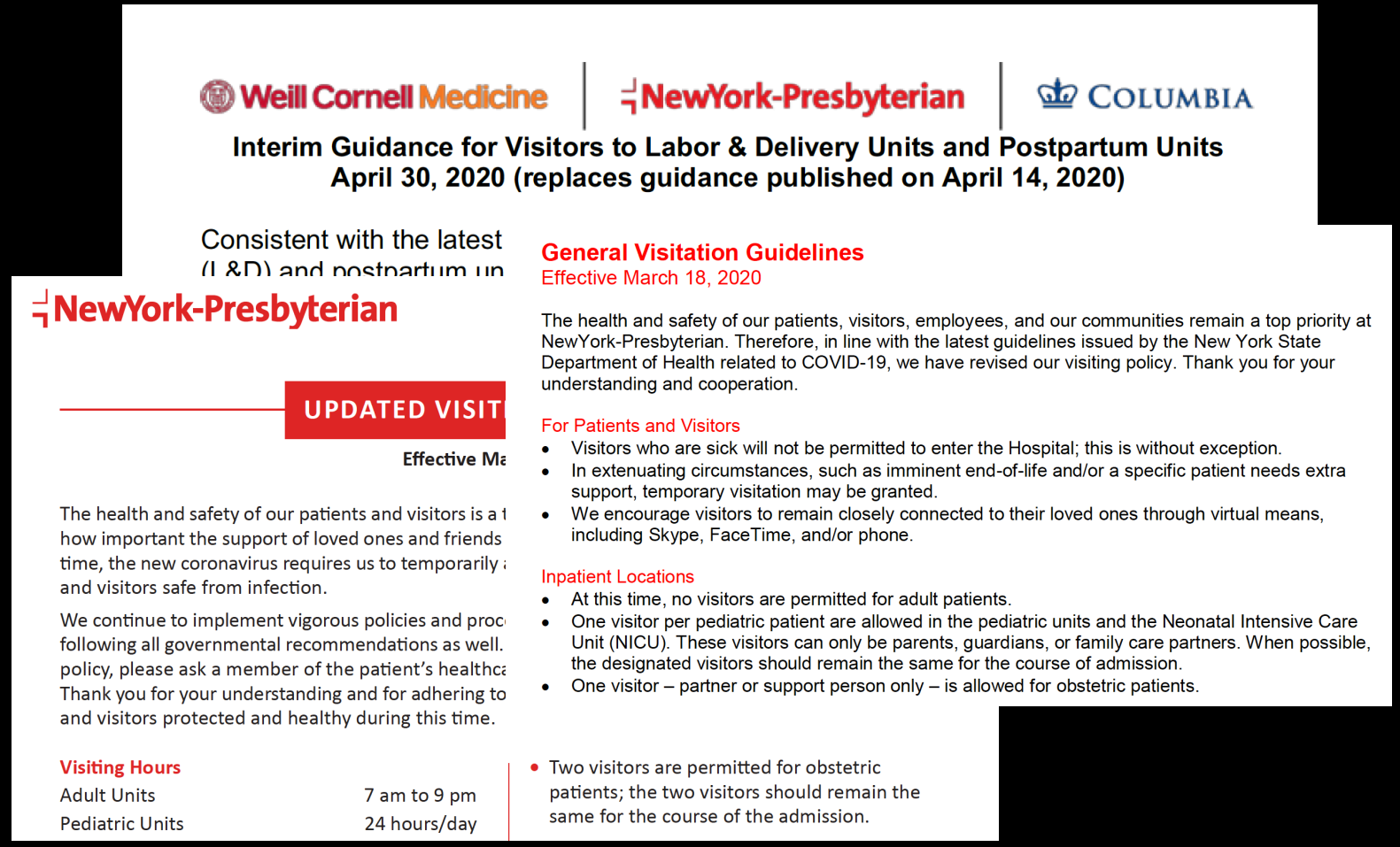
Updated June 28, 2020 Print

Visitor Guidelines

- Visitors should be limited, regardless of known community transmission.
- If visitors are allowed facilities should:
  - Designate entrance
  - Screen and with fever or symptoms instructed to leave the facility and seek care if needed
  - Encourage visitors to be aware of signs and symptoms and not enter facility if they have
  - Visual alerts/Signage
  - Discourage from visiting patients who are increased risk
  - Apply alternatives for direct interaction between visitors and patients
  - Have staff members who are able to provide training and education to visitors.

Visitor Guidelines

- Considerations:
  - Number
  - Type
  - Location
  - Duration
  - Symptom Screening
  - Testing
  - Education
  - PPE



Weill Cornell Medicine | NewYork-Presbyterian | Columbia

Interim Guidance for Visitors to Labor & Delivery Units and Postpartum Units
April 30, 2020 (replaces guidance published on April 14, 2020)

Consistent with the latest
(L&D) and postpartum un

NewYork-Presbyterian

UPDATED VISIT

Effective Ma

The health and safety of our patients and visitors is a t
how important the support of loved ones and friends
time, the new coronavirus requires us to temporarily
and visitors safe from infection.

We continue to implement vigorous policies and proc
following all governmental recommendations as well.
policy, please ask a member of the patient's healthca
Thank you for your understanding and for adhering to
and visitors protected and healthy during this time.

Visiting Hours

Adult Units	7 am to 9 pm
Pediatric Units	24 hours/day

- Two visitors are permitted for obstetric patients; the two visitors should remain the same for the course of the admission.

General Visitation Guidelines
Effective March 18, 2020

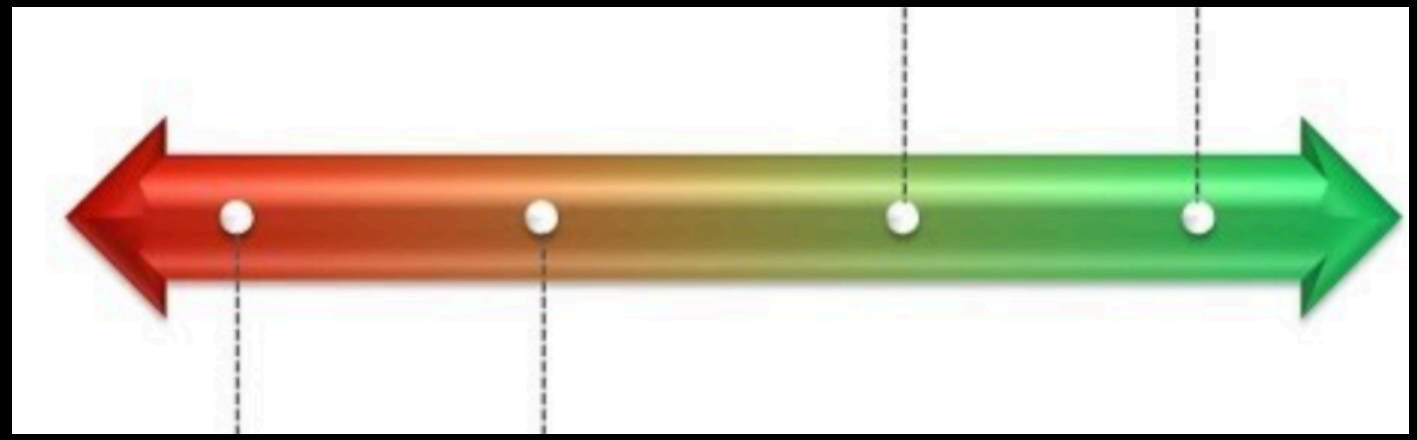
The health and safety of our patients, visitors, employees, and our communities remain a top priority at NewYork-Presbyterian. Therefore, in line with the latest guidelines issued by the New York State Department of Health related to COVID-19, we have revised our visiting policy. Thank you for your understanding and cooperation.

For Patients and Visitors
- Visitors who are sick will not be permitted to enter the Hospital; this is without exception.
- In extenuating circumstances, such as imminent end-of-life and/or a specific patient needs extra support, temporary visitation may be granted.
- We encourage visitors to remain closely connected to their loved ones through virtual means, including Skype, FaceTime, and/or phone.

Inpatient Locations
- At this time, no visitors are permitted for adult patients.
- One visitor per pediatric patient are allowed in the pediatric units and the Neonatal Intensive Care Unit (NICU). These visitors can only be parents, guardians, or family care partners. When possible, the designated visitors should remain the same for the course of admission.
- One visitor – partner or support person only – is allowed for obstetric patients.

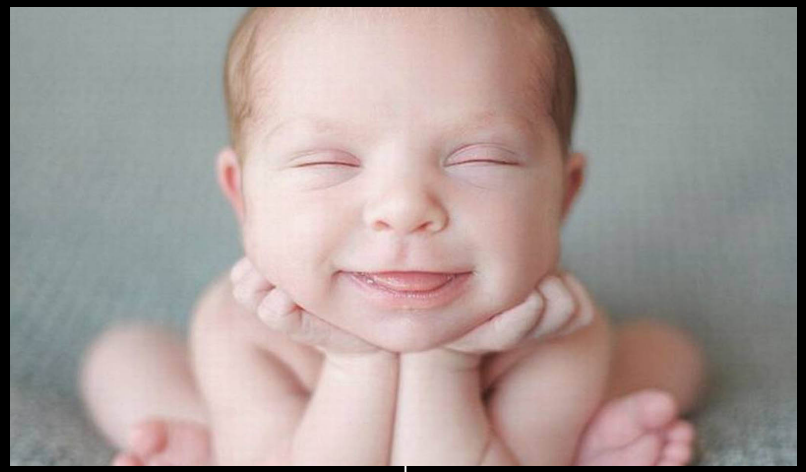
Visitor Guidelines

- 2 consistent
- 1 consistent
- None
- One L&D only
- One through PP
- One plus doula through PP
- Antepartum
  - Consistent with adult patients: none; one from 11-3; one from 11-6:30



Newborn Care

As of May 11
17 of 467 (4%) newborns positive for SARS-CoV-2; most asymptomatic or with mild disease

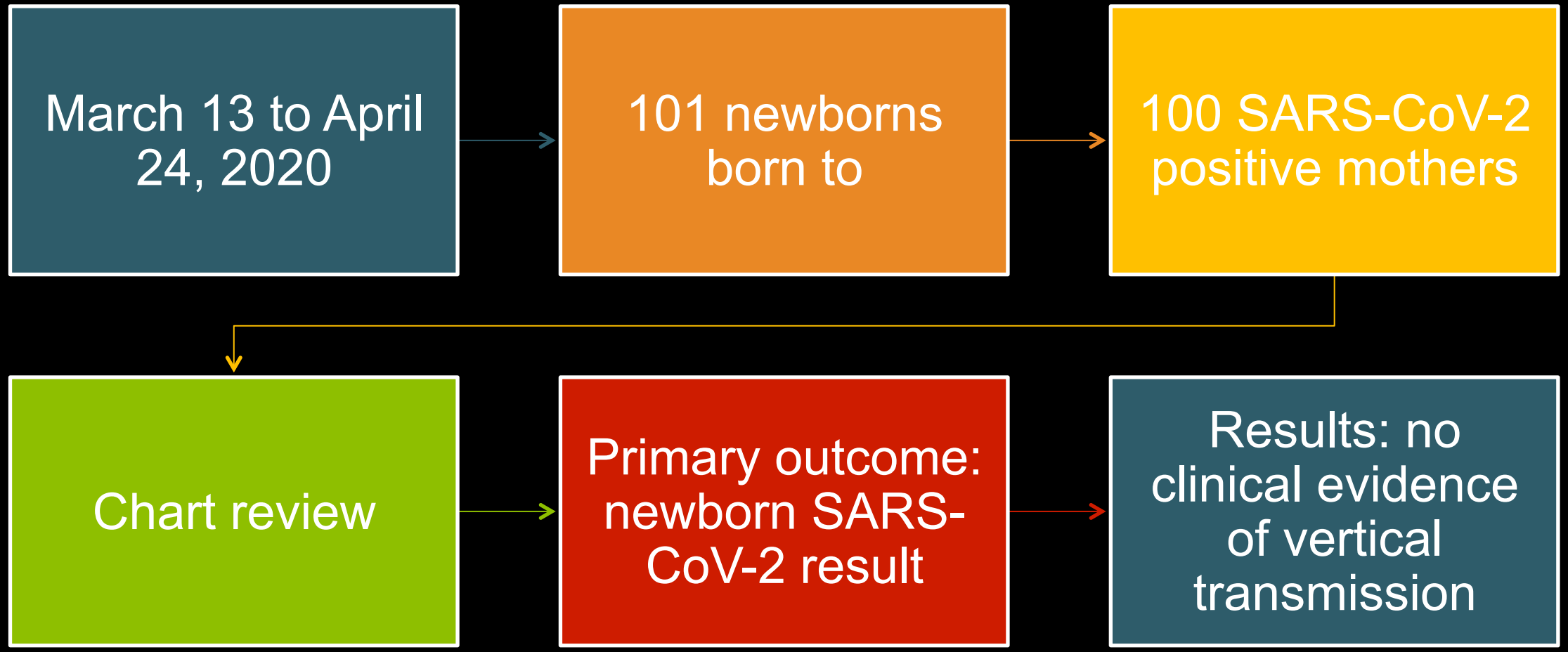


COLUMBIA | OBSTETRICS AND GYNECOLOGY

Paper	Country	Date published	Ninfants tested	N PCR-infected infants	Infected infant symptoms	Infant outcomes	Maternal severity
Zhu et al., 2020	China	2/10/20	10				Mild
Liu, Wang et al., 2020	China	2/25/20	3				Mild
Wang, Zhou et al., 2020	China	2/28/20	1				
Liu, Chen et al., 2020	China	3/4/20	13				
Li, Zhao et al., 2020	China	3/5/20	1				
Chen, Guo et al., 2020	China	3/7/20	9				
Zhang et al., 2020	China	3/7/20	10				
Wang, Guo et al., 2020	**China**	**3/12/20**	**1**	**1**	**Thickened lung texture**		
Chen, Peng et al., 2020	China	3/16/20	4				
Chen, Zhang et al., 2020	China	3/16/20	17				
Fan et al., 2020	China	3/17/20	2				
Liu, Li et al., 2020	China	3/18/20	11				
Yu et al., 2020	**China**	**3/24/20**	**3**	**1**	**Mild shortness of breath pulmonary infection**		
Zambrano et al., 2020	Honduras	3/25/20	1				
Dong et al., 2020	China	3/26/20	1				
Liao et al., 2020	China	3/26/20	1				
Zeng, Xia et al., 2020	**China**	**3/26/20**	**33**	**3**	**Pneumonia, lethargy and fever, shortness of breat**		
Zeng, Xu et al., 2020	China	3/26/20	6				
Chen, Liao et al., 2020	China	3/28/20	5				
Li, Han et al., 2020	China	3/30/20	3				
Zhang, Yu et al., 2020	**China**	**4/8/20**	**4**	**4**	**Shortness of breath, fev cough**		
Schnettler, Ahwel, & Suhag, 2020	United States (OH)	4/14/20	1				
Carosso et al., 2020	Italy	4/14/20	1				Mild
Lowe & Boppe, 2020	Australia	4/15/20	1				Mild
Chen, Li et al., 2020	China	4/17/20	8				NR
Zamaniyan et al., 2020	**Iran**	**4/17/20**	**1**	**1**	**Fever**	**Recovered within 1 week**	**Critical**
Alzamora et al., 2020	**Peru**	**4/18/20**	**1**	**1**	**Mild respiratory difficulty, cough**	**Recovered, time NR**	**Severe**
Lyra et al., 2020	Portugal	4/20/20	1				Mild
Yan, Guo et al., 2020	China	4/23/20	86				Mild to critical
Kelly et al., 2020	United States (MO)	4/23/20	1				Critical
Sharma et al., 2020	India	4/23/20	1				Asymptomatic
Hu et al., 2020	**China**	**4/24/20**	**7**	**1**	**None**	**No symptoms**	**Mild**
Hantoushzadeh et al., 2020	**Iran**	**4/24/20**	**6**	**1**	**Pneumonia**	**Remains intubated but stable, time NR**	**Critical**
Lu et al., 2020	China	4/24/20	1				Asymptomatic
Vintzileos et al., 2020	United States (NY)	4/25/20	29				Two-thirds asymptomatic
Ferrazzi et al., 2020	**Italy**	**4/27/20**	**42**	**2**	**None**	**No symptoms**	**Mild to moderate**
Buonsenso et al., 2020	**Italy**	**5/2/20**	**2**	**1**	**None**	**No symptoms**	**Mild to moderate**
Wu et al., 2020 - full text not yet available, info from abstract	China	5/5/20	5				NR
Pierce-Williams et al., 2020	United States (NY, NJ, PA, and OH)	5/8/20	33	1	None	No symptoms	Severe to critical
Dumitriu et al., 2020	**United States (NY)**	**In press, JAMA Peds**	**101**				**Asymptomatic to critical**

The Columbia Experience (in press JAMA Peds)

Study design:



The Columbia Well Baby Nursery Experience

- First OB COVID-19 diagnosis on **March 13, 2020**
- Universal testing of moms in labor started **March 22, 2020**
- Guidance ***did not*** follow some of the recommendations from e.g. AAP, CDC, WHO
  - mom-baby never separated
  - breastfeeding always encouraged
- More than half of babies were followed up in a special "COVID Newborn Clinic" for their first newborn visit
- Babies born to SARS-CoV-2 positive moms between March 13 and June 23:

n=224

- Babies born with clinical evidence of COVID-19 perinatally or in follow up:

n=0

Neonatal management and outcomes during the COVID-19 pandemic: an observation cohort study

Christine M Salvatore, Jin-Young Han, Karen P Acker, Priyanka Tiwari, Jenny Jin, Michael Brandler, Carla Cangemi, Laurie Gordon, Aimee Parow, Jennifer DiPace, Patricia DeLaMora**

Summary

Background The risk of vertical and perinatal transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2, which causes COVID-19), the most appropriate management, and the neonate's risk of developing COVID-19 during the perinatal period are unknown. Therefore, we aimed to elucidate best practices regarding infection control in mother–newborn dyads, and identify potential risk factors associated with transmission.

Methods In this observational cohort study, we identified all neonates born between March 22 and May 17, 2020, at three New York Presbyterian Hospitals in New York City (NY, USA) to mothers positive for SARS-CoV-2 at delivery. Mothers could practice skin-to-skin care and breastfeed in the delivery room, but had to wear a surgical mask when near their neonate and practice proper hand hygiene before skin-to-skin contact, breastfeeding, and routine care. Unless medically required, neonates were kept in a closed Giraffe isolette in the same room as their mothers, and were held by mothers for feeding after appropriate hand hygiene, breast cleansing, and placement of a surgical mask. Neonates were tested for SARS-CoV-2 by use of real-time PCR on nasopharyngeal swabs taken at 24 h, 5–7 days, and 14 days of life, and were clinically evaluated by telemedicine at 1 month of age. We recorded demographics, neonatal, and maternal clinical presentation, as well as infection control practices in the hospital and at home.

Findings Of 1481 deliveries, 116 (8%) mothers tested positive for SARS-CoV-2; 120 neonates were identified. All neonates were tested at 24 h of life and none were positive for SARS-CoV-2. 82 (68%) neonates completed follow-up at day 5–7 of life. Of the 82 neonates, 68 (83%) roomed in with the mothers. All mothers were allowed to breastfeed; at 5–7 days of life, 64 (78%) were still breastfeeding. 79 (96%) of 82 neonates had a repeat PCR at 5–7 days of life, which was negative in all; 72 (88%) neonates were also tested at 14 days of life and none were positive. None of the neonates had symptoms of COVID-19.

Interpretation Our data suggest that perinatal transmission of COVID-19 is unlikely to occur if correct hygiene precautions are undertaken, and that allowing neonates to room in with their mothers and direct breastfeeding are safe procedures when paired with effective parental education of infant protective strategies.

Funding None.

Lancet Child Adolesc Health 2020

Published Online
July 23, 2020
https://doi.org/10.1016/S2352-4642(20)30235-2

See Online/Comment
https://doi.org/10.1016/S2352-4642(20)30241-8

*These authors contributed equally

Division of Pediatric Infectious Diseases (C M Salvatore MD, J-Y Han MD, K P Acker MD, P DeLaMora MD) **and Division of Neonatology** (P Tiwari MD, J Jin MD), **Departments of Pediatrics** (J DiPace MD), **Weill Cornell Medicine, New York Presbyterian—Komansky Children's Hospital, New York, NY, USA; Division of Neonatology** (M Brandler MD), **Departments of Pediatrics** (C Cangemi MD, L Gordon MD), **New York Presbyterian—Queens, New York, NY, USA; and Division of Neonatology** (A Parow MD), **Departments of Pediatrics** (J DiPace), **New York Presbyterian—Lower Manhattan Hospital, New York, NY, USA**

Correspondence to:
Dr Christine M Salvatore

Conclusions based on NYP Columbia and Weill Cornell Well Baby Nursery experience

Rooming in is safe if mom wears mask and practices appropriate hygiene

Direct breastfeeding is safe

Early bathing is not necessary and may be harmful

AAP no longer recommends separating newborns from mothers with COVID-19

By Ken Downey Jr.
Source/Disclosures

ADD TOPIC TO EMAIL ALERTS

In updated guidance, the AAP said it no longer recommends separating newborns from mothers infected with COVID-19 — a precaution that was included in the initial guidance issued in April, when less was known about COVID-19 and newborns.

"At the beginning of the pandemic, the only data available came from China, where the universal approach was to immediately separate all newborns from the infected mother and isolate them for 14 days," **Karen M. Puopolo, MD, PhD**, chief of newborn pediatrics at Pennsylvania Hospital, and colleagues wrote in the new guidance. "After months of national and international experience with newborns born to mothers who have tested positive for SARS-CoV-2, no published report has identified an infant who has died during the initial birth hospitalization as a direct result of SARS-CoV-2 infection."

The AAP provided this summary of its related guidance for newborn care during the pandemic:

- Mothers with COVID-19 and newborn infants may room-in according to usual center practice.
- During the birth hospitalization, the mother should maintain a reasonable distance from her infant when possible. When mother provides hands-on care to her infant, she should wear a mask and perform hand-hygiene.
- Health care workers should use gowns, gloves, standard procedural masks, and eye protection (face shields or goggles) when providing care for well infants.
- If noninfected partners or other family members are present during the birth hospitalization, they should use masks and hand hygiene when providing hands-on care to the infant.

The AAP said it anticipates further revisions as further evidence becomes available.

About the Presenters

Joseph Biggio, MD, MS

System Chair, Women's Service Line

System Chair, Maternal Fetal Medicine Ochsner Health, New Orleans, LA

COVID-19 and OB Services

Joseph R. Biggio Jr., MD, MS
System Chair, Women's Service Line

Ochsner™ Health System

Overview

- Outpatient OB care
- Testing criteria
- Inpatient care
  - L&D
  - Mother-Baby
- Inpatient COVID-19 care
- Employee Return to work and Reopening

Ochsner™ Health System

OUTPATIENT OB CARE

Ochsner™ Health System

Modification to schedule for prenatal care

- Antenatal testing
  - Gestational age for initiation
  - Strength of indication
  - Consider delay or omission depending on potential benefit vs. risk
- Ultrasound
  - Scheduling
  - Follow-up
  - Cleaning
- Telehealth

Ochsner™ Health System

Ochsner Maternal Fetal Medicine COVID-19 antenatal surveillance modifications

INDICATION FOR TESTING	GA	FREQUENCY
Once weekly testing		
Advanced maternal age *(≥40 y/o)*	32→34	**MVP & NST** *OR* **BPP** once a week
Cardiac disease, maternal	32→34	**MVP & NST** *OR* **BPP** once a week
Chronic HTN		**MVP & NST** *OR* **BPP** once a week
Well controlled on no or 1 med	32→34	
Poorly controlled or 2 or more meds	32	
Decreased fetal movement	28*	once when complaint – NST ± MVP
Decreased fetal movement, persistent	32*→34	**MVP & NST** *OR* **BPP** once a week
DM, good control	32→34	**MVP & NST** *OR* **BPP** once a week
Fetal anomalies	Individualize per MFM recs‡	
GDM, no meds (A1)	40	**MVP & NST** *OR* **BPP** once a week
GDM on meds (A2)	32→34	**MVP & NST** *OR* **BPP** once a week
Gestational HTN--nonproteinuric	32→34	**MVP & NST** *OR* **BPP** once a week
Hyperthyroidism, uncontrolled	32→34	**MVP & NST** *OR* **BPP** once a week
In vitro fertilization	32→34	**MVP & NST** *OR* **BPP** once a week
Isoimmunization	32→34 (or per MFM)	**MVP & NST** *OR* **BPP** once a week
Morbid Obesity (*BMI 45 or greater*)	32→34	**MVP & NST** *OR* **BPP** once a week
Moderate or Severe Polyhydramnios (AFI ≥30)	32→34	**MVP & NST** *OR* **BPP** once a week
Twins††		**MVP & NST** *OR* **BPP** once a week
Monochorionic	32	
Dichorionic (normal growth)	34	
Twice a week testing		
Antiphospholipid antibody syndrome	32→34	**BPP** once/week & **NST** once/week
Cholestasis of pregnancy	32	**BPP** once/week & **NST** once/week
Chronic renal disease (Cr ≥1.5)	32	**BPP** once/week & **NST** once/week
Connective tissue Dz (e.g. SLE)	32	**BPP** once/week & **NST** once/week
DM, suboptimal control**	32	**BPP** once/week & **NST** once/week
Gastroschisis	32→34	**BPP** once/week & **NST** once/week
Fetal growth restriction (EFW <10th%)	28	**BPP** once/week & **NST** once/week
Oligohydramnios (MVP <2 cm)	28	**BPP** once/week & **NST** once/week
Preeclampsia (as outpatient)	At dx	**BPP** once/week & **NST** once/week
Prolonged pregnancy	41	**BPP** once/week & **NST** once/week
Sickle Cell Disease/Sickle-Thal	32	**BPP** once/week & **NST** once/week
Stillbirth, prior (nonanomalous)	32 OR 2 wks before GA of last stillbirth but not <28	**BPP** once/week & **NST** once/week

Ochsner™ Health System

Ochsner Maternal Fetal Medicine COVID-19 Ultrasound Protocol Modifications

- Cleaning
  - After each visit—computer, machine, bed, door knobs
  - Gloves when handling linens
- Scheduling
  - Dating or NT
  - ? TV ultrasound for cervical length
    - Abdominal screen
    - TV if < 3.0 cm
  - Follow up interval
    - Growth: Change from q 4 to q 6
    - Reduce serial scans
    - Completion of anatomy at 26-28 weeks

Ochsner™ Health System

Screening at entry—Inpatient and outpatient

- Symptom screening
  - Cough
  - Fever
  - URI sx
  - SOB
  - Exposure, pending test result
- Temp check
- All patients and visitors must wear a mask

  - **If medically safe and reasonable, any visits or procedures (e.g. ultrasound) should be delayed at least 10 days from symptom onset/positive test and until the patient has been afebrile for 72 hours and had symptomatic improvement.**

Ochsner™ Health System

TESTING CRITERIA

Ochsner™ Health System

Testing Criteria

- Patients admitted to L&D—
  - Rapid testing regardless of symptoms
- All patients admitted to hospital
  - Antepartum, postpartum, GYN
- All patients with a planned in-hospital procedure should have pre-procedural testing for COVID-19 up to 72-hours prior

Ochsner™ Health System

Scheduled Procedures in L&D and Testing

- If OB patient tests positive on presentation to L&D or at a pre-admit testing appointment:
  - Scheduled procedure/induction should be postponed 10 days only if it is medically reasonable and possible without significant risk to mother or infant.
  - If the procedure/induction cannot be postponed for 10 days, provide care with isolation precautions as required for COVID-19 + patients.
  - For COVID-19 positive patients, it is preferable to provide care in a planned fashion than in an urgent, unscheduled fashion.

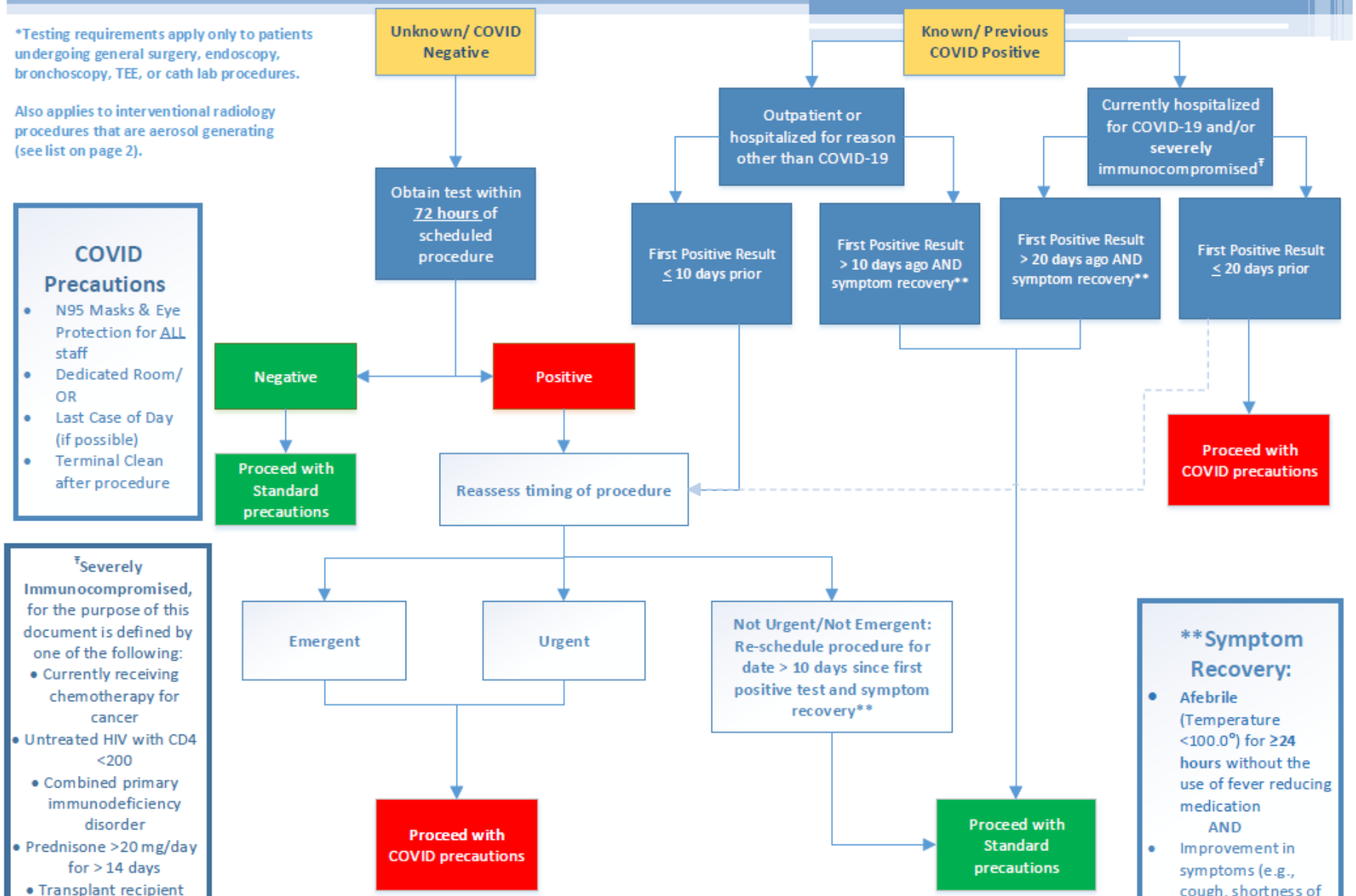
Ochsner™ Health System

COVID-19 Pre-Op and Pre-Procedural Testing*

July 23, 2020

*Testing requirements apply only to patients undergoing general surgery, endoscopy, bronchoscopy, TEE, or cath lab procedures.

Also applies to interventional radiology procedures that are aerosol generating (see list on page 2).



COVID Precautions

- N95 Masks & Eye Protection for ALL staff
- Dedicated Room/ OR
- Last Case of Day (if possible)
- Terminal Clean after procedure

₸**Severely Immunocompromised,** for the purpose of this document is defined by one of the following:

- Currently receiving chemotherapy for cancer
- Untreated HIV with CD4 <200
- Combined primary immunodeficiency disorder
- Prednisone >20 mg/day for > 14 days
- Transplant recipient

**Symptom Recovery:

- Afebrile (Temperature <100.0°) for ≥24 hours without the use of fever reducing medication
  AND
- Improvement in symptoms (e.g., cough, shortness of breath)

OchsnerHealth

Testing Criteria

- If a patient had a *positive SARS-CoV-2 test within the last 120 days,* the test does not need to be repeated
  - Viral RNA can be amplified for weeks
  - 10 days after symptom onset or the first positive test, the virus cannot be grown in culture
  - CDC has concluded that at 10 days patients are likely no longer infectious
    - Exception may be severely immunocompromised or those with severe disease

Ochsner™ Health System

Visitor Policies

- Ensure safety of patients and staff
- **Outpatient**
  - No visitors allowed unless assistance needed; may be accompanied by one adult
- **Inpatient**
  - Maternity unit limited to 1 spouse/partner or support person
  - Doulas allowed
- Visitors must be symptom-free and remain in patient room and not congregate in common areas
  - Visitors not being tested at this time

Ochsner™ Health System

INPATIENT CARE

Ochsner™
Health System

Isolation Requirements

	Rule Out COVID-19	Confirmed COVID-19	Previous COVID-19 Infection
Definition	Symptomatic patients who are being tested for COVID-19	Patients with positive COVID-19 test result requiring isolation	Patients who have recovered from their COVID-19 symptoms and meet criteria for isolation discontinuation. See below for more details.
Isolation	Airborne, Contact and Droplet		None

- Patients who had COVID-19 that did not require admission and now have symptom improvement as well as those always asymptomatic can have isolation discontinued 10 days after the first positive test.

- **Severe/critical illness or severe immunocompromise:**
  - **Isolation until 20 days from first + result AND symptom recovery.**
  - ***Symptom Recovery*= symptom improvement and >24 hours fever-free (NOT 72 hours) without the use of anti-pyretics**
- ***Severe or critical illness*=**Hospitalized for COVID-19 disease
- ***Severely Immunocompromised***
  - Currently receiving chemotherapy for cancer
  - Untreated HIV with CD4 count <200
  - Prednisone 20 mg/day for >14 days
  - Transplant recipient
  - Primary immunodeficiency disorder

Ochsner™ Health System

Situation	COVID-19 Positive OR Symptomatic PUI	Low Suspicion (e.g. universal L&D screening)
Initial Evaluation	Gown and gloves N95 mask Eye protection	Surgical face mask
Obtaining nasal/ nasopharyngeal swab	Gown and gloves N95 mask Eye protection Merge with other patient care activity	Surgical face mask Eye protection
Vaginal Delivery	Fluid resistant gown Gloves N95 covered with surgical face mask Eye protection	Fluid resistant gown Gloves Surgical face mask Eye protection
Cesarean Delivery	Sterile Fluid resistant gown Gloves, shoe cover, hat N95 covered with surgical face mask Eye protection	Sterile Fluid resistant gown Gloves, shoe cover, hat Surgical face mask Eye protection

Limiting exposures

- Limit staff caring for patients with confirmed or suspected COVID-19 to as few individuals as possible to safely care for the patient.
  - **Students should NOT be involved in direct bedside care of patients with COVID-19 or symptomatic PUIs**.
- Ancillary care providers, such as nutrition and social work, should interact with patients via telephone or other remote technology.
- N95 respirators are absolutely necessary ONLY during aerosol generating procedures. When available, staff can wear an N95 when caring for patients with confirmed/suspected COVID-19.

Ochsner™
Health System

General guidance in caring for COVID-19 Positive OB Patients

- Early epidural to limit need for general anesthesia in an emergency
- Since SARS-CoV-2 can be isolated from stool, consider draping the anal area at vaginal delivery
- Since COVID-19 has been associated with an increased risk of bleeding, have uterotonic medications readily available.
- No circumcision for baby of COVID-19 positive mothers until negative infant result available.

Ochsner™ Health System

OR Procedures for COVID-19

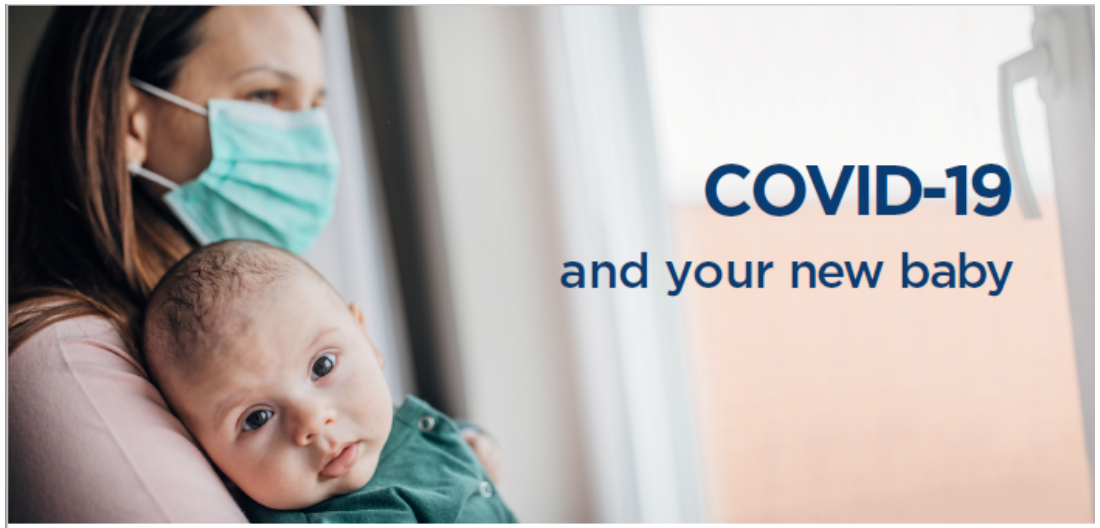
- Limit number of individuals in OR
- If a patient needs to be intubated and/or extubated while in the OR, other than those required to be present for that procedure should exit the room
- Recovery should occur in the patient's room on Labor & Delivery or in the room in which she will stay postpartum to minimize contamination of multiple areas
- **Non-negative pressure room AND patient was on airborne isolation and/or if aerosol generating procedure was performed within 1 hour before patient exit from room** – wait-to-clean time 60 minutes after patient departure
- **Operating room** – wait-to-clean time 30 minutes after patient departure

Ochsner™ Health System

Infants of COVID-19 Mothers

- All babies born to mothers COVID-19 + mothers are PUI
  - Infant will be tested at 24 hours and 48 hours of life
- No visitors are allowed while infant is considered PUI or tests positive
- **Location of Infant**
  - AAP no longer recommending separation except perhaps in those with severe disease. The mother should wear a surgical mask at all times. The infant should be kept at least 6 feet away (with a screen barrier, if possible)
  - Direct breast feeding is no longer discouraged
  - Rate of neonatal infection similar whether room-in or separate

Ochsner™ Health System



COVID-19
and your new baby

AAP (American Academy of Pediatrics) Recommendations:

- You should either isolate yourself from the baby in different rooms OR separate yourself by at least 6 feet
- Breastmilk, not breastfeeding is recommended.
- You should have a healthy adult care for your baby while you are isolated, including when feeding with breastmilk or formulas.
- Wash your hands and wear a mask when pumping or when you are in close contact with your baby. If you are breastfeeding, wash your breasts.
- You may stop isolation or 6 feet separation:
  - At least 3 days (72 hours) have passed with fever (without fever-reducing medications) and improvement in cough, shortness of breath, etc.
    AND
  - At least 7 days have passed since symptoms first appeared

Protect You and Your Baby

- Frequent hand washing: soap and water for 20 seconds or hand sanitizers with more than 60% alcohol
- Cough and sneeze in your elbow or cover nose and mouth with a tissue and throw it away
- Frequently clean surfaces you touch
- You and your partner should be your baby's only physical contact
- Other household members should limit their close interactions
- If anyone has symptoms he/she should stay home and conduct a virtual visit - ochsner.org/anywhere
- Do not take baby out in public and you are to continue social distancing of at least 6 feet
- Continue to follow your pediatrician's and APP's recommendations

Moms with no symptoms but exposed to positive or suspected person with symptoms (Exposed: 3 hours or more in the same room)

- Moms should wear mask for 14 days from the last exposure.
- Skin to skin and breastfeeding are acceptable. You do not have to isolate from your baby.
- If you live with the COVID positive or suspected person with symptoms, they must remain isolated in a separate room with a separate bathroom until no symptoms for 72 hours or 7 days from onset.

Revised 4/6/20

Ochsner™ Health System

Ochsner Health

Discharge of mother and infant

- Routine postpartum parameters for discharge readiness but must remain on home quarantine
- Remain hospitalized only if indicated for other clinical reasons, such as respiratory distress.
- A COVID-19 positive mother should be informed that she cannot discontinue home quarantine and accompany the infant to well-baby care visits until:
  - No fever for at least 24 hours without antipyretics
  - At least 10 days have passed since onset of symptoms or first positive test for COVID-19 unless severe disease or immunocompromised in which case 20 days of isolation
  - Symptomatic improvement
- If the baby needs medical care within the first 14 days of life, the mother should call in advance and explain that her baby was exposed to COVID-19 so that appropriate isolation precautions can be arranged.

Ochsner™ Health System

COVID-19 PATIENT EVALUATION AND CARE

Ochsner™
Health System

Evaluation and treatment of COVID-19 suspected

- Place in a room with decreased traffic flow
- Vitals
- Pulse oximetry
- SARS CoV-2 viral PCR
- ***Not all patients need labs, but for those with anything other than mild symptoms, or if there is concern for need for admission***

- CBC, CMP, Ca, Mg, Phos
- ABG if respiratory distress or O2 sat < 95% on RA (sustained)
- CXR (moderate-severe sx or O2 sat <95%)
- EKG
- If admitted—Procalcitonin, Ferritin, CRP, LDH, troponin, D-Dimer, Vitamin D
- Lactic acid and Blood Cultures if concern for sepsis or needing ICU admission

Ochsner™ Health System

Increased risk for severe disease

- D-Dimer > 1.0 mg/L
- CRP > 100 mg/L
- LDH > 245 U/L
- Troponin > 2x normal
- Absolute lymphocyte count < 0.8
- Ferritin > 300 mcg/L

Ochsner™ Health System

Ochsner OB Criteria for admission

- Pneumonia on imaging and/or fever alone are NOT criteria for admission
  - Radiographic findings worse than clinical picture

- Abnormal ABG indicative of impending respiratory failure
- O2 sat < 95% on RA or exertional desaturation
- O2 requirement to maintain O2 saturation > 94%
- Respiratory rate > 24 or Heart Rate > 125
- Dehydration with inability to tolerate po intake

- Discharged patients need symptom monitoring and follow-up

Ochsner™
Health System

Ochsner MFM Initial Management Recommendations

- Albuterol MDI 2-4 puffs q 4-6 h if wheezing (dosing based on symptoms—AVOID NEBULIZER unless absolutely necessary)
- IVF for initial resuscitation (LR or 0.9% saline) 30cc/kg if there is concern for hypotension or dehydration then KVO if tolerating po
- Acetaminophen 650 mg q 6 hr scheduled if febrile
- Lovenox 40 mg qd (unless contraindication)
- Guaifenesin 400 mg q 4 hr or 600 mg q 12 if congestion, rhonchi or productive cough
- If admitted and pneumonia on CXR AND O2 requirement
  - Ceftriaxone 1 gm IV q 24 AND Azithromycin 500 mg IV/PO followed by 250 PO for 4 doses (5 day course)
  - If normal procalcitonin repeatedly, discontinue antibiotics

Ochsner™ Health System

Unproven Treatments

- Should not be used in the routine management or prophylaxis in pregnant women
  - Hydroxychloroquine
  - Azithromycin
  - Protease inhibitors
  - IVIG
  - Convalescent plasma
  - Interferon

Ochsner™ Health System

Respiratory Support for Inpatients with COVID-19

FOR ALL PATIENTS WITH HYPOXEMIA AND COVID-19

- Goal SpO2 92-96%
- ORDER: Incentive Spirometer & Flutter Valve
- ORDER: Continuous Pulse Oximetry or VISI
- **RESPIRATORY THERAPY CONSULT**
  - **ORDER: "Respiratory Communication COVID"**
  - Bronchodilator Protocol: adjust dose & delivery (MDI vs neb w/ Aerogen filter) to best fit patient's needs
  - Assess patient Q4hr and titrate supplemental O2
  - Airway Clearance Protocol, Atelectasis/Hyperinflation Protocol
  - Aeroeclipse, Aerogen, External Percussion, IPV, Vest therapy, BiPAP, High flow therapy

PLACEMENT	OXYGEN DELIVERY DEVICE	THERAPIES
MEDSURG or TELEMETRY	**LOW FLOW NASAL CANNULA** -Set at 1-6 LPM ->3LPM should be humidified	**RT Consult COVID** -IS & Flutter Valve -RT Protocols
	VENTIMASK (VM) or OXYMASK -VentiMask up to 50% FiO2 -OxyMask up to 95% FiO2	**SELF PRONING** 
	HIGH FLOW NASAL CANNULA (HFNC) -Bubble Flow 1-15LPM -Comfort Flow 1-70LPM, 21-100% FiO2 -humidified & heated - Surgical face mask on patient - PPE on provider	Review Protocol: -Safety -Contraindications Order: -Nurse & RT Communication -"prone protocol" Instruction: -RT to instruct patient -Provide handout to patient -Confirm continuous pulse ox
RSU HIGH FLOW O2 UNIT -Co-mgmt with Critical Care -Pts w/ rapid O2 increase -HFNC, NRB, & BiPAP -Optional pre-ICU step -Do not delay ICU if needed -Neg pressure unit	**BiPAP** -Neg. pres. room/ RSU -HEPA filter -Proper PPE -Start 15/12 or per RT Discontinue if: -Intolerant -Mask removed x2 -GCS <10	**NONREBREATHER** -Flow 10-15 LPM -Keep bag inflated For meals: -Switch to HFNC -Consider NPO Important note: -Cannot wean NRB -Wean to HFNC, VM
CRITICAL CARE -RSU is optional -Do not delay ICU consult if rapid deterioration	**INTUBATION & MECHANICAL VENTILATION** -For pts rapidly or progressively worsening despite measures above -Do not delay ICU consult	

Deterioration

Recovery

Ochsner™ Health System

Anticoagulation

- Thromboprophylaxis recommended for all hospitalized COVID-19
  - LMWH 40 mg sq daily
  - Need to weigh carefully with potential need for delivery and may need to alter strategy
- Increased risk for developing atrial fibrillation with cardiac inflammation
  - Therapeutic dosing should be considered if develop cardiac rhythm disturbance even PACs

Ochsner™ Health System

RECOVERY Trial--Effect of Dexamethasone in Hospitalized Patients with COVID-19

- Hospitalized patients requiring supplemental O2 or invasive ventilation
- Death reduced 20-35%
  - Hypoxemia
    - SpO2 < 95%
    - Requiring supplemental O2
    - Mechanical ventilation or ECMO
  - Not recommended in non-hypoxemic or ambulatory due to increased risk of harm
- Pregnant women were not included
- Dose
  - 6 mg po or IV daily for up until 10 d OR until discharge from hospital

Ochsner™ Health System

https://doi.org/10.1101/2020.06.22.20137273

Antenatal Corticosteroids for FLM

- During first wave, concern about potential adverse maternal effects with corticosteroid treatment
- ACS and late-preterm ACS were discouraged

- Single course of antenatal corticosteroids if there is concern about the potential need for fetal delivery in the next 7-14 days can be considered
  - ? Use dexamethasone vs betamethasone
  - ? Late preterm antenatal corticosteroids

Ochsner™ Health System

Remdesivir

- Criteria
  - SARS-CoV-2 infection 4 or fewer days before initiation
  - Inpatient hospitalization
  - SpO2 <95% on room air or requiring supplemental O2
  - Radiographic evidence of pulmonary infiltrates
- Exclusion
  - ALT/AST 5 x upper limit of normal
  - Creatinine clearance < 30 mL/min
  - Used in pregnancy only if the potential benefit justifies the potential risk
- 200 mg d 1 then 100 mg daily for up to 10 d

Ochsner™ Health System

Beigel JH, Tomashek KM, Dodd LE, et al. Remdesivir for the Treatment of Covid-19 - Preliminary Report [published online ahead of print, 2020 May 22]. *N Engl J Med*. 2020;NEJMoa2007764. doi:10.1056/NEJMoa2007764

RETURN TO WORK AND REOPENING

Ochsner™ Health System

Return to work Policies

- If test results are NEGATIVE exclude from work until:
  - 24 hours fever-free without anti-pyretics AND
  - Improvement in symptoms
- If test results are POSITIVE follow CDC's symptom-based strategy and exclude from work until:
  - At least 24 hours have passed since recovery defined as resolution of fever without anti-pyretics AND improvement in symptoms
  - At least 10 days have passed since symptoms first appeared
- If test results are POSITIVE but employee never had symptoms, follow CDC's time-based strategy and exclude from work until:
  - 10 days have passed since first positive COVID-19 test AND no symptoms have developed
  - If symptoms develop after positive result, use above symptom-based strategy

Ochsner™ Health System

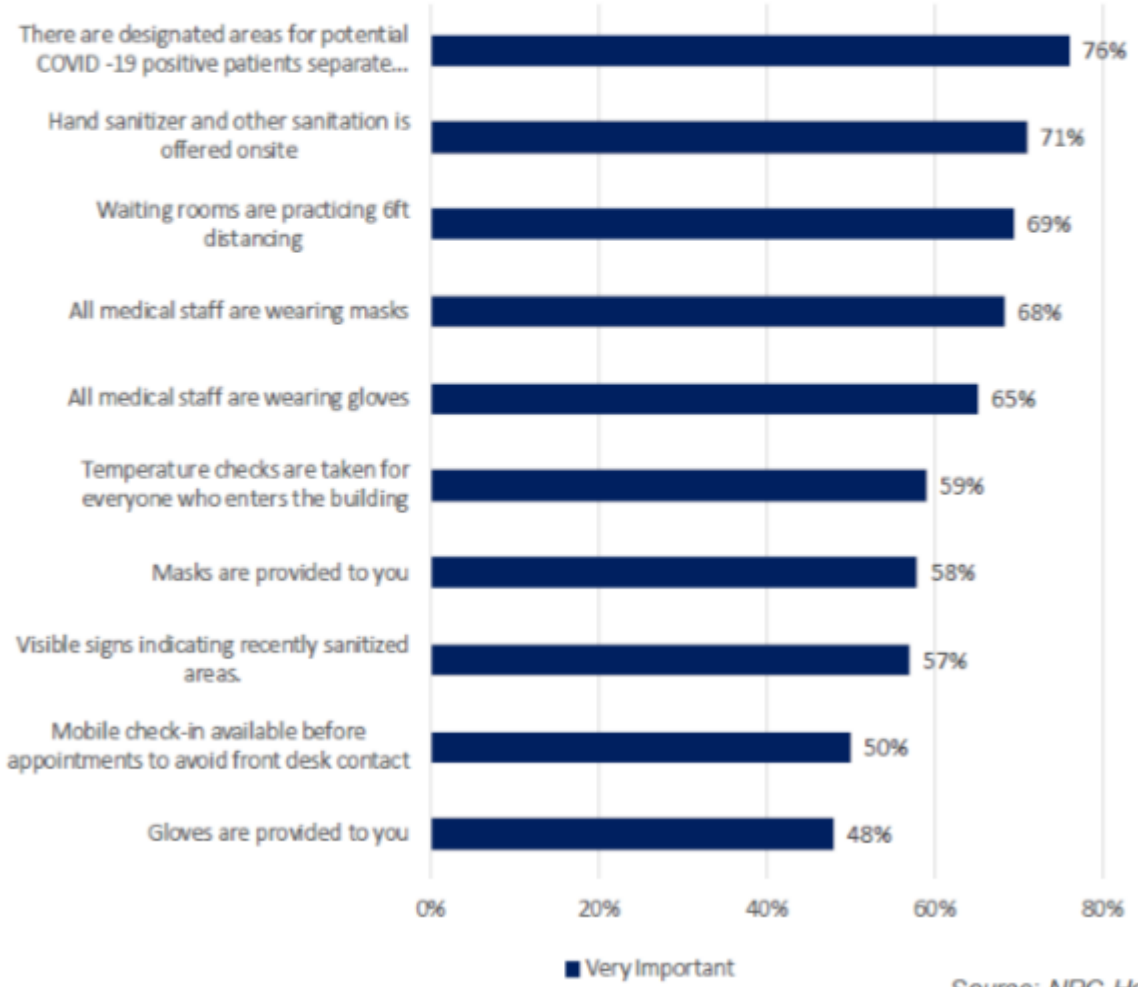
Ramp up of outpatient services

- Depends on the degree to which services were scaled down
  - Routine ultrasound timing
  - Follow-up ultrasound interval
  - Prenatal testing
  - Prenatal care schedule
- We modified each of above to reduce exposure risks
- Plan gradual return to pre-pandemic state
  - Beginning with timing of routine ultrasound

Ochsner™ Health System

What Our Patients Are Telling Us About Returning

If you had an in-person visit with your healthcare provider within the next two weeks, how important would the following safety measures be to ensure you feel comfortable?



You have indicated that you feel comfortable or somewhat comfortable going to certain healthcare setting if they were open. Please explain in your own words, why you feel this way.

- A healthcare facility would probably take extreme measures to make sure the facility was protected as much as possible for the patient.
- I would feel comfortable enough to go to healthcare visits IF I had to go. If it was not a necessity, then I would not go.
- I would wear a mask.
- I would think that the facility and the tools being used should be even more sanitized and cleaned extra well than normally.

Source: NRC Health, Ochsner COVID-19 Readiness to Return Survey, Louisiana. n= 517. Margin of error= 6%

What Our Patients Are Telling Us About Returning

- When asked, "How comfortable would you be visiting these establishments if you were in need of their services?"
  - Consumers **feel more comfortable in a healthcare** setting than a restaurant, shopping mall, or movie theater.

Movie Theater	Shopping Mall	Restaurant	Dentist	Emergency Room	An urgent care clinic	Annual primary care check-up or OB/GYN appointment	A doctor's appointment with a specialist

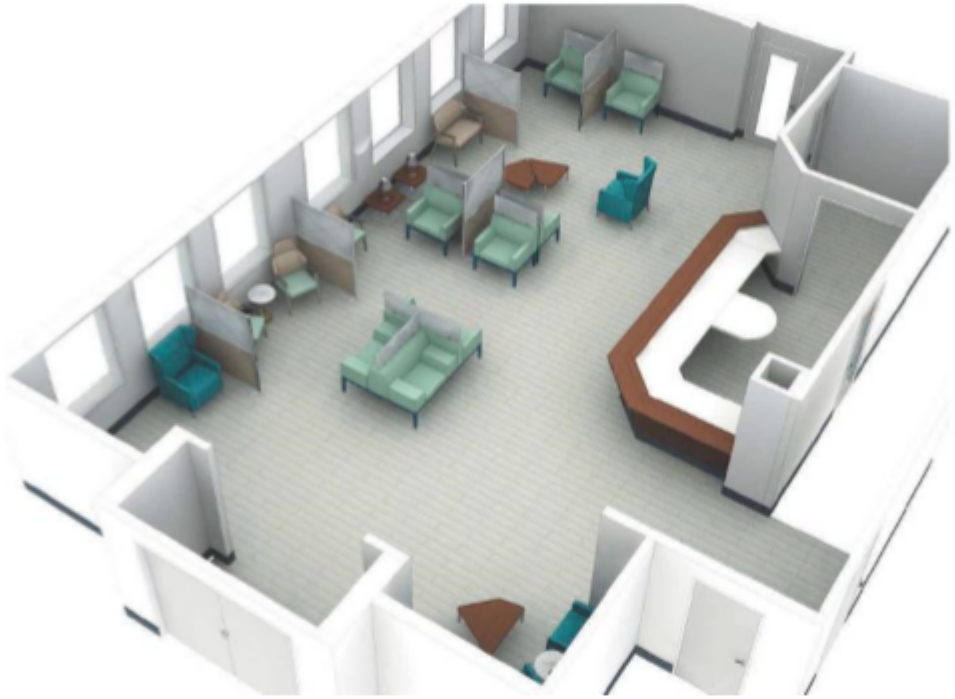
Source: NRC Health, Ochsner COVID-19 Readiness to Return Survey, Louisiana. n= 517. Margin of error= 6%

Making patients feel safe

- **Mobile check in and curbside arrival options**
  - Allow patients to check in from their vehicle and be notified by text when their provider is available
  - Geofencing technology detects patient arrival to clinic allowing patients to check-in via MyChart mobile app from vehicle
- **Screening stations**
  - For all patients, visitors and employees entering an facility to check temperatures and ask basic COVID-19 questions
- **Sneeze guards at registration counter**
- **Personal Protective Equipment (PPE)**
  - Distributed including a mask and access to hand sanitation stations
- **Social distancing protocols in Waiting rooms, elevators and cafeterias**
- **Rigorous sanitation standards**
  - Cleaning public and private areas between patients
  - Cleaning common areas and waiting rooms
- **Direct patient communication and marketing**
  - Ensure patients know what we are doing to meet their safety expectations
- **Virtual visits**

Ochsner™ Health System

Environment of Care Updates



Questions?

PLEASE ENTER YOUR AUDIO PIN ON YOUR PHONE SO WE ARE ABLE TO UN-MUTE YOU FOR DISCUSSION.

IF YOU HAVE A QUESTION, PLEASE ENTER IT IN THE QUESTION BOX OR RAISE YOUR HAND TO BE UN-MUTED.

FPQC

Other Questions?

fpqc@usf.edu

Follow, Subscribe, Share!

YouTube

You can receive weekly perinatal COVID-19 resource updates by joining our mailing list!

Visit www.fpqc.org/communications

Thank You!