IL PQC
Illinois Perinatal Quality Collaborative

COVID-19 Strategies for OB & Neonatal Units

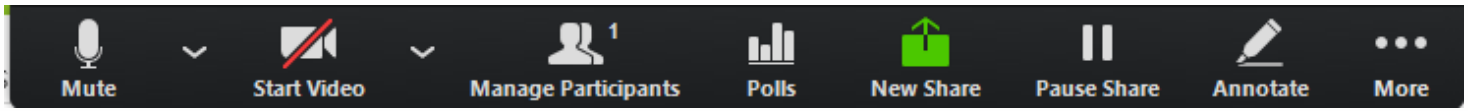
April 10, 2020

12:00 – 1:30pm

Welcome

Please be certain you are on *"mute"* when not speaking to avoid background noise.

Whether you have joined by phone or computer audio, you can mute and unmute yourself by clicking on the microphone icon.



The following shortcuts can also be used

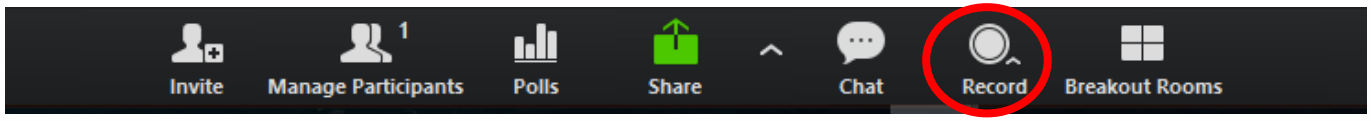
For PC: Alt + A : Mute or Unmute

For Mac: Shift + Command + A: Mute or Unmute

For telephone: *6 : Mute or Unmute

Housekeeping: Chat box

Housekeeping:
We Are Recording Now



COVID-19

- Thank you to IDPH for ongoing leadership and partnership.
- During this time our goal at ILPQC is to continue to be a source of information and support for our hospital teams, providers, nurses who care for pregnant women and newborns across the state.
- Our focus and concern is for healthcare workers on the front lines of this crisis and the patients we are all working to keep safe.

Todays webinar

- Much is unknown. And what we know is changing quickly.
- The strategies shared today are examples from individual institutions not IDPH or ILPQC recommendations.
- We will plan follow up COVID-19 webinars as an ongoing platform for discussion across OB and neonatal providers in IL. We need your feedback to improve, please let us know future topics or format that you would prefer.
- Please put questions/comments into the chatbox or email directly to info@ilpqc.org

Overview

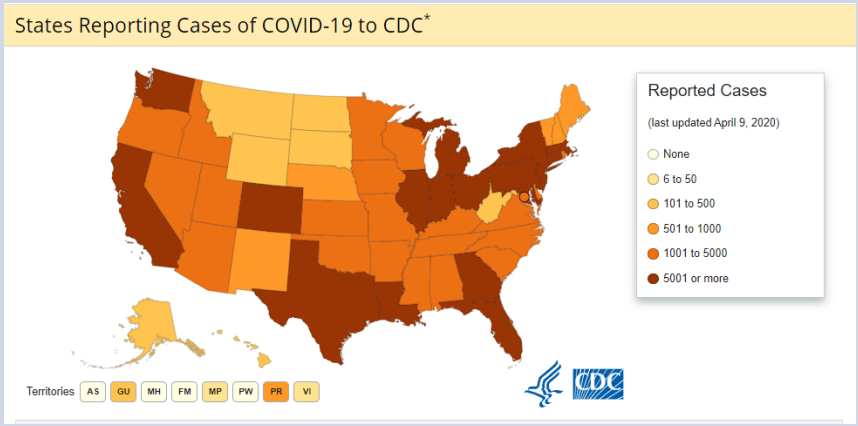
- **Introduction**
- **Discussion of Neonatal Unit Strategies**
  - Martin Schmidt, MD, Director-Newborn Nursery, St. Mary's, St. Louis
  - Becky Boedeker, DNP, Newborn Nursery, St. Mary's, St. Louis
  - Katie Althoff-Moore, BSN, Nursing Team Lead, St. Mary's Hospital St. Louis
  - Malika Shah, MD, Newborn Nursery, Medical Director, Prentice Women's Hospital, Chicago
  - Leslie Caldarelli, MD, NICU Director, Prentice Women's Hospital, Chicago
  - Justin Josephsen, MD, Medical Director – St. Mary's Hospital NICU, Neonatologist Cardinal Glennon Children's Hospital, St. Louis

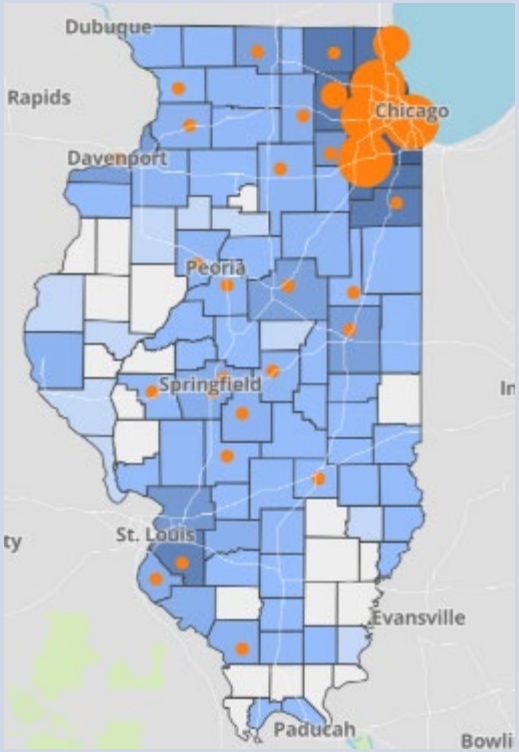
Overview (continued)

- **Discussion of OB Unit Strategies**
  - Jean Goodman, MD, Maternal Fetal Medicine, Loyola University Medical Center
  - Emily Miller, MD, Maternal Fetal Medicine, Northwestern Memorial Hospital
  - Abbe Kordik, MD, OB/GYN, University of Chicago Medical Center
  - Rob Abrams, MD, Executive Director - SIU Center for Maternal - Fetal Medicine, HSHS St. John's Hospital, Springfield
- Wrap Up

Data Update **April 9, 2020**
CDC/IDPH: COVID-19 Outbreak

CDC **https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html**	**IDPH** **https://www.dph.illinois.gov/covid19**
•Total cases: **427,460** •Total deaths: **14,696** •Jurisdictions reporting cases: 55 (50 states, District of Columbia, Puerto Rico, Guam, the Northern Mariana Islands, and US Virgin Islands) * Data include both confirmed and presumptive positive cases of COVID-19 reported to CDC or tested at CDC since January 21, 2020, with the exception of testing results for persons repatriated to the United States from Wuhan, China and Japan.	• **16,422** Confirmed Cases in Illinois • **528** Deaths





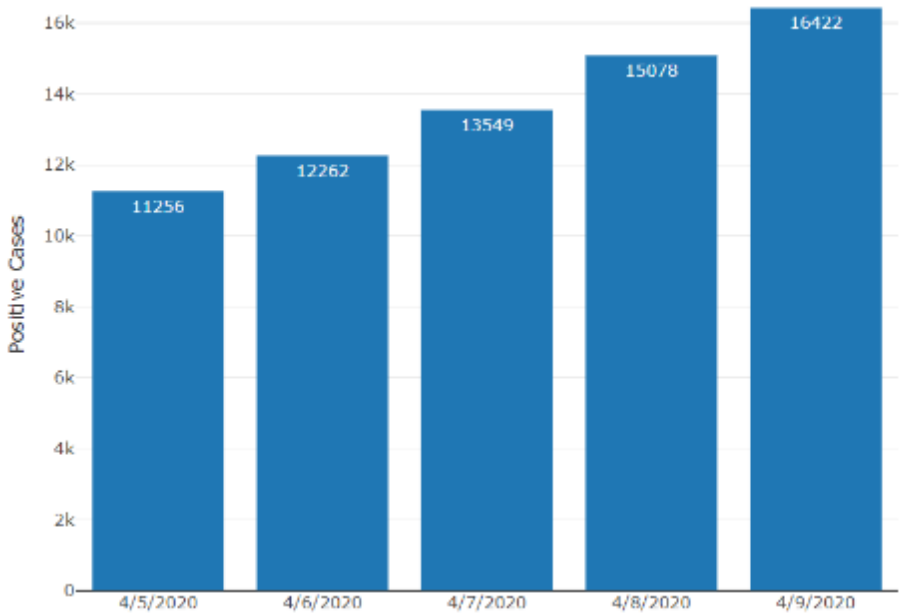
Data Update **April 9, 2020**

IDPH: COVID-19 Outbreak

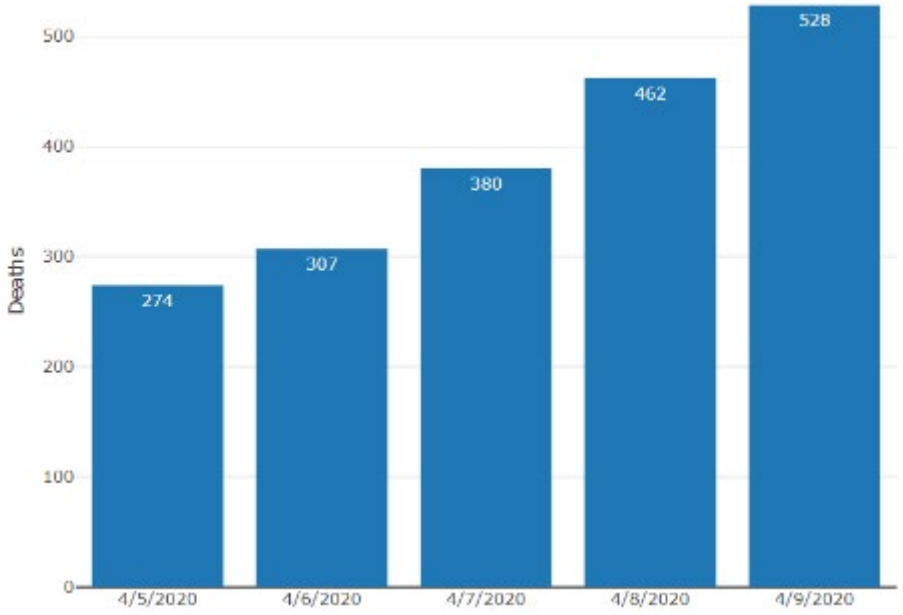
https://www.dph.illinois.gov/covid19

IL PQC Illinois Perinatal Quality Collaborative

IL Positive Cases Last 5 Days



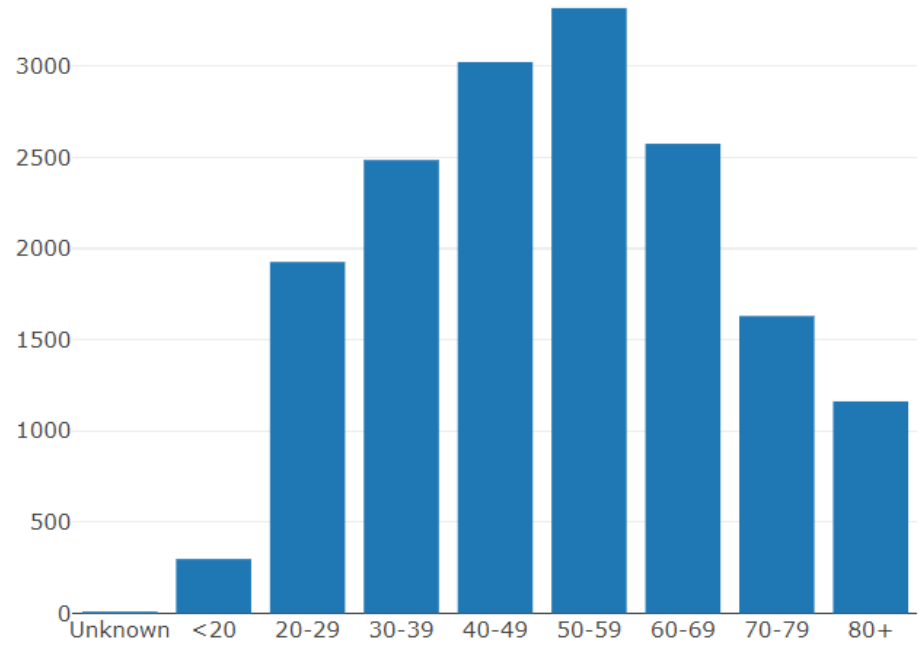
IL Deaths Last 5 Days



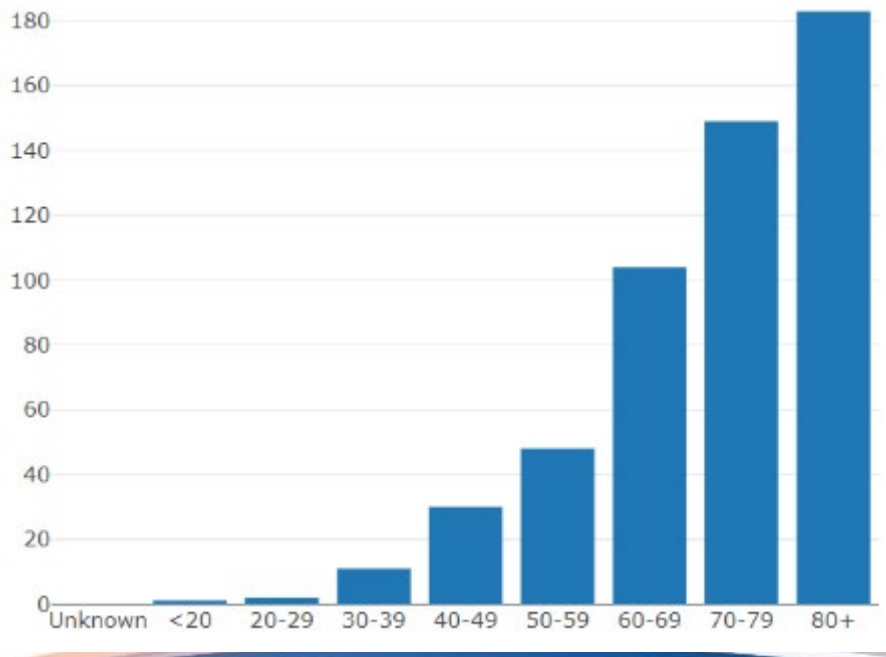
Data Update **April 9, 2020**
IDPH: COVID-19 Outbreak
Age Demographics

https://www.dph.illinois.gov/covid19

Confirmed Cases



Deaths

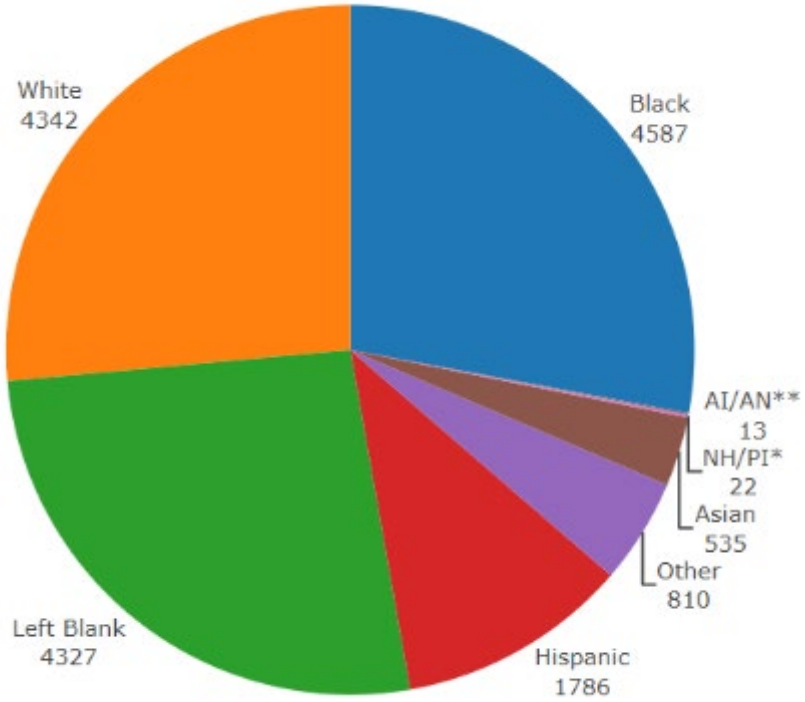


Data Update **April 9, 2020**
IDPH: COVID-19 Outbreak
Race Demographics

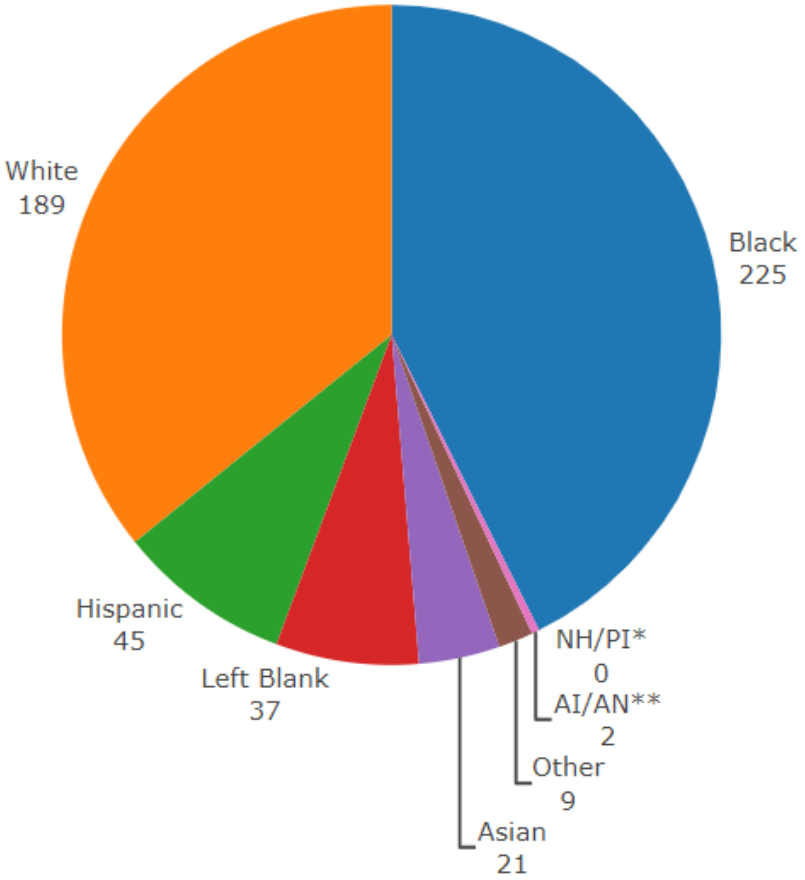
https://www.dph.illinois.gov/covid19

Illinois Perinatal Quality Collaborative

Confirmed Cases



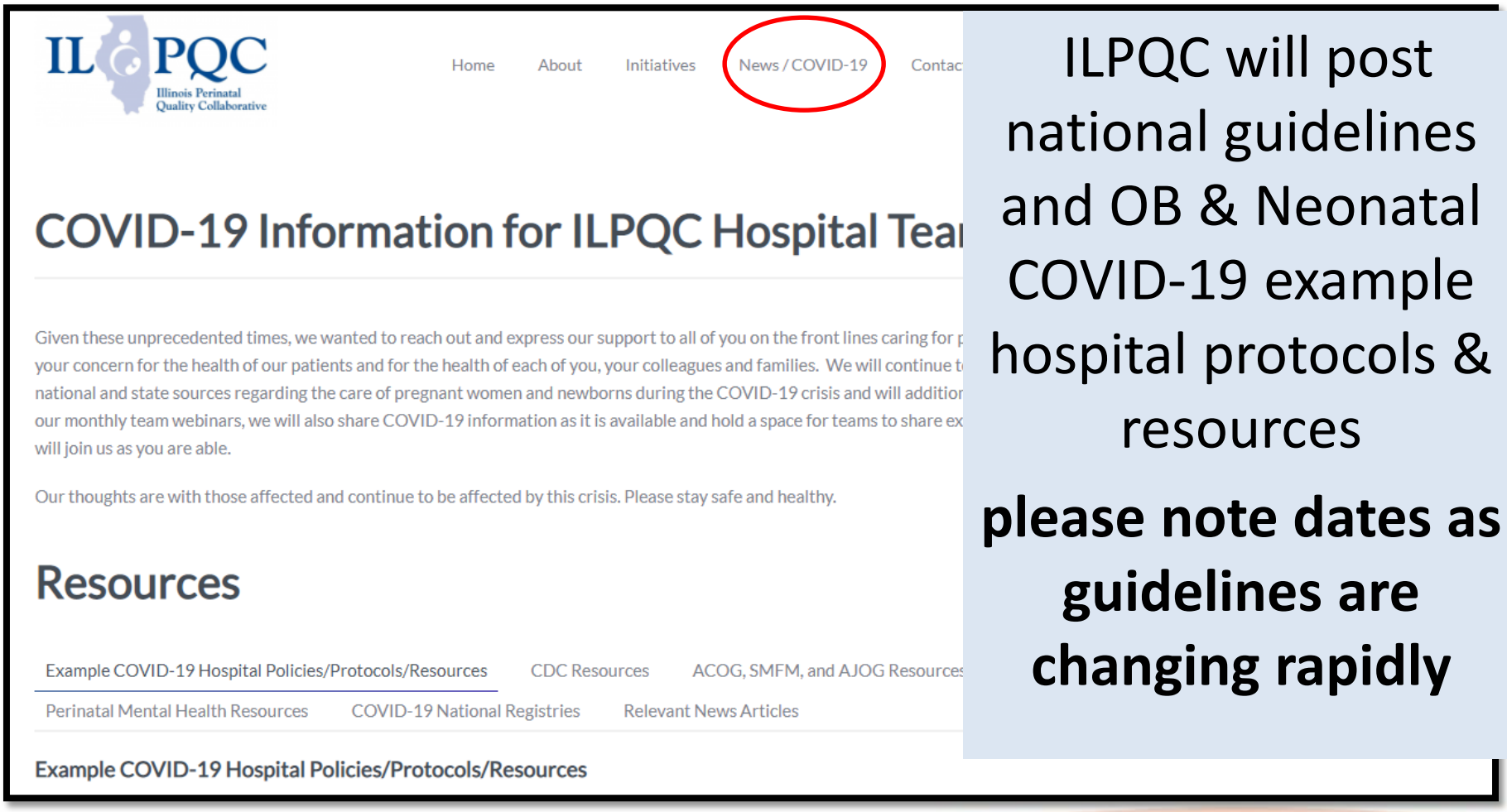
Deaths



IDPH Guidance 3/30/20

- IDPH released guidance for the care of pregnant women and newborns during the Covid 19 pandemic.
- See overview of guidance in slides at the end of this slide set.
- Link to guidance: IDPH: Recommended Guidance for the Care of Pregnant Women and Newborns During the COVID-19 Pandemic

ILPQC COVID-19 Webpage www.ilpqc.org



ILPQC will post national guidelines and OB & Neonatal COVID-19 example hospital protocols & resources

please note dates as guidelines are changing rapidly

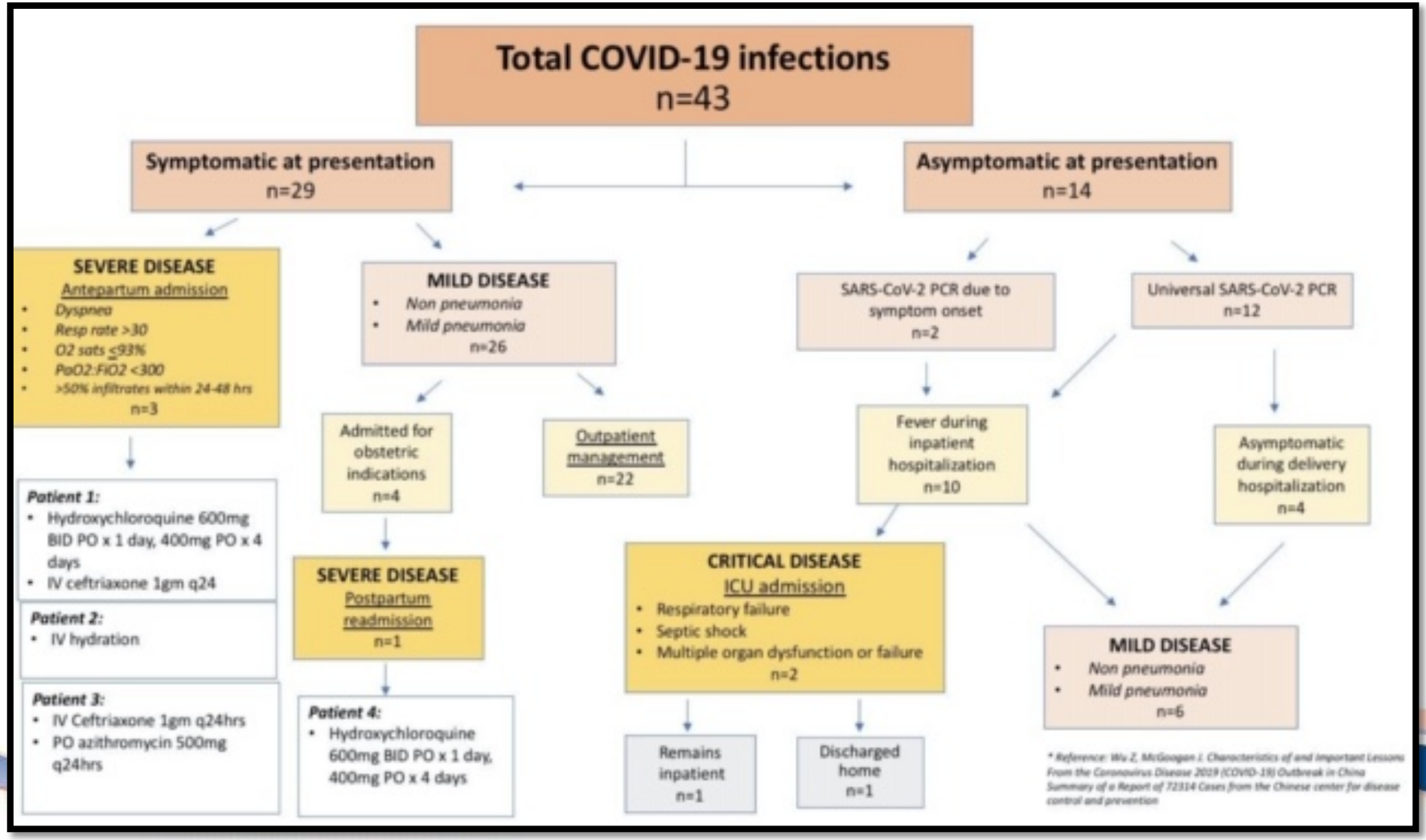
https://ilpqc.org/covid-19-information/

Updated OB/Neo Resources

- SMFM/ACOG: Outpatient Assessment and Management for Pregnant Women With Suspected or Confirmed Novel Coronavirus (COVID-19) (3.13.20)
- SMFM Guidance for COVID-19 (3.19.20)
- Strategies to reduce risk from work to families at home (3.26.20)
- AJOG: COVID-19 In Pregnancy Early Lessons (3.27.20)
- SMFM, ACOG, AAFP, and ACNM Statement; Patient-Centered Care for Pregnant Patients During COVID-19 Pandemic (3.30.2020)
- ACOG/SMFM Clarify CDC's Recommendations on Use of PPE (3.31.2020)
- AAP- FAQs: Management of Infants Born to Mothers with Suspected or Confirmed COVID-19 (4.2.2020)
- AAP- Initial Guidance: Management of Infants Born to Mothers with COVID-19 (4.2.2020)
- AJOG: COVID-19 infection among asymptomatic and symptomatic pregnant women: Two weeks of confirmed presentations to an affiliated pair of New York City hospitals (4.7.2020)

AJOG Article 4.6.20 NYC OB cases

COVID-19 infection among asymptomatic and symptomatic pregnant women: Two weeks of confirmed presentations to an affiliated pair of New York City hospitals (4.6.2020)- https://ilpqc.org/wp-content/uploads/2020/04/43_COVID_0403202028129.pdf



AJOG New Columbia Article

COVID-19 infection among asymptomatic and symptomatic pregnant women: Two weeks of confirmed presentations to an affiliated pair of New York City hospitals (4.7.2020)- **https://ilpqc.org/wp-content/uploads/2020/04/43_COVID_0403202028129.pdf**

Principle Findings

- The authors found that COVID-19 infection in pregnant women presenting with obstetric complaints or for delivery is often asymptomatic,
  - *suggesting a role for universal testing of pregnant women being admitted to the Labor Unit (if universal testing not available, then low threshold for PUI testing and need for universal PPE on L&D).*
- They further found that while many of these women ultimately developed symptoms, disease severity in this small cohort of pregnant patients - 86% mild, 9.3% severe, 4.7% critical - **appeared similar to what is described in the literature for non-pregnant people**.

COVID-19 OB & Neonatal National Registries

OB Registry:

- PRIORITY: Nationwide registry established by UCSF for pregnant and postpartum women with suspected COVID-19 or confirmed diagnosis. The goal is to gather a high volume of nationwide data quickly.
- CDC is collecting surveillance data on pregnant women with COVID through a supplement to the regular case report form (CRF), which should be completed on all COVID-19 cases. The **CRF can be found online**.

Neonatal Registry:

- Section on Neonatal-Perinatal Medicine (SONPM) National Perinatal COVID-19 (NPC-19) Registry

Maternal Health Resources

- During this crisis heightened awareness of need for mental health resources for our patients and staff.
- IL Perinatal Depression Program Hotline 1-866-364-MOMS (1-866-364-6667)
- Postpartum Depression Illinois Alliance

  1-847-205-4455
- NAMI (National Alliance for the Mentally Ill) Help line 1-800-950-NAMI (1-800-950-6264)
- Mental Health and Coping During COVID-19 | CDC
- Resources for providers, families, and leaders to support the health and well-being of communities impacted by COVID-19

New Patient Education Resources

- IL EverThrive Protecting and Caring for Your Family During the Coronavirus Outbreak (4.3.2020)
- SMFM Information for Women & Families (4.3.2020)
- "Is It Safe to Provide Milk for my Baby if I Have, or Have Been Exposed to, COVID-19" (Adapted by ILPQC with permissions 4/2020)
- "If Your Doctors Suspect You Have COVID-19" (Adapted by ILPQC with permissions 4/2020)
- MoMMA's Voices COVID-19 Patient Resources Page (Last Updated 4.5.2020)
- The 4th Trimester Project's patient education website on COVID-19 For New Moms (3.2020)


ILPQC

IS IT SAFE TO PROVIDE MILK FOR MY BABY IF I HAVE, OR HAVE BEEN EXPOSED TO, COVID-19?

With so much news in the media about COVID-19, it is natural to be concerned about whether providing milk for your baby is safe or even advisable. This is especially true if you think you have been exposed to or diagnosed with COVID-19. However, *your milk is not only safe, but beneficial for your baby.*

DOES COVID-19 GET INTO MY MILK?

We do not know for sure whether mothers with COVID-19 pass the virus into their milk. The very few studies on this topic did not find COVID-19 in mother's milk. Studies of mothers who had a similar virus (Severe Acute Respiratory Syndrome; SARS-CoV) did not find the SARS virus in the mother's milk.

However, any virus that makes its way into the mother's blood stream causes the mother to make very specific types of protection, called antibodies, that fight these same viruses. These antibodies pass into the mother's milk. So, in the unlikely event that the virus is transferred in the milk, so are the antibodies that even the most modern medicines cannot provide.

WOULDN'T IT JUST BE BEST FOR MY BABY TO HAVE FORMULA OR DONOR MILK?

It is easy to think that it is "on the safe side" to avoid breastfeeding or providing your milk, but the opposite is true. Only your milk — not formula or donor milk — has the one-of-a-kind antibodies to lower the chances that your baby becomes sick with COVID-19.

All authorities (World Health Organization, Centers for Disease Control, American Academy of Pediatrics, Academy of Breastfeeding Medicine) recommend that breastfeeding (milk provision) should continue in the presence of COVID-19.

WHAT CAN I DO TO LOWER THE CHANCES MY BABY IS EXPOSED TO COVID-19 WHILE PROVIDING MY MILK?

IF DIRECTLY BREASTFEEDING: Use good hand hygiene before touching baby and wear a mask while breastfeeding.

IF PUMPING: Remember that all germs, including COVID-19, can get into pumped milk, even if they do not start off in the breast itself. Here are several precautions you can take:

- Wash your hands with warm, soapy water or alcohol hand sanitizer before you start to pump or handle milk collection equipment. Germs from your hands can get into the pumped milk even if they are not in the milk beforehand.
- once daily with a microwave steam bag, by boiling in a pot on the stove, or in the dishwasher (Sani-cycle).
- Avoid coughing or sneezing on the breast pump collection kit and the milk storage containers. This tip is


ILPQC

IF YOUR DOCTORS SUSPECT YOU HAVE CORONAVIRUS (COVID-19)

It is recommended that you *isolate yourself* as much as possible and have a *healthy person to assist with your home and baby.*

TAKING CARE OF YOURSELF TO MINIMIZE THE SPREAD OF THE VIRUS:

- Stay in one room, away from other people, as much as possible.
  - If possible, use a separate bathroom.
  - Avoid sharing personal household items, like dishes, towels, and bedding.
  - If face masks are available, wear one when you are around people.
  - If you can't wear a face mask, others should wear one when near you.
- Wash your hands often with soap and water for at least 20 seconds. If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol. Cover all surfaces of your hands and rub them together until they feel dry.
- Avoid touching your eyes, nose, and mouth.
- Avoid having any unnecessary visitors.

TAKING CARE OF YOUR BABY:

- If you don't have a helper to feed and care for your baby, wear a face mask whenever you are closer than 6 feet from you baby.
- Proper hand hygiene should be used prior to and following all baby care.
- Call your pediatrician if your baby develops symptoms (difficulty breathing, repeated coughing, temperature of more than 100.4, or stops eating well).
  - If you can't reach your pediatrician, call your local emergency room and explain that the baby might have been exposed to COVID-19. This will let them know you're coming so they can prepare to keep you and other patients safe. If you are gravely worried, call 911.
- When you need to visit your doctor or your pediatrician, call ahead to let them know you might have COVID-19. They may have special procedures for you.

TAKING CARE OF YOUR HOME:

- Clean all surfaces that are touched often, like counters, tabletops, and doorknobs, every day. Use household cleaning sprays or wipes according to the label instructions.
- Wash laundry thoroughly:
  - If laundry is soiled, wear disposable gloves and keep the soiled items away from the body while laundering. Wash hands immediately after removing gloves.

REMAIN UNDER THE SELF-HOME ISOLATION PRECAUTIONS UNTIL:

- Your symptoms, like cough, shortness of breath, muscle aches, and sore throat, get better.
- Your temperature has been less than 100.4 (no fever or chills) for 72 hours without use of fever reducing medications.
- At least 7 days have passed since symptoms first appeared.

April 2020 - For more information, visit www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/care-for-someone.html

Birth Equity and COVID19

- MGH Boston OB/GYN: Equity in the Time of COVID-19 (4.8.2020)
- MGH Boston Example Birth Equity and COVID-19 Workflow (4.3.2020)
- https://www.apa.org/topics/covid-19-bias
- https://implicit.harvard.edu/implicit/featuredtask.html
- https://www.dropbox.com/sh/zvg12qp7g477un9/AADAndcUeK1QzjYzwtGnhSqda?dl=0 (Multilingual COVID resources)
- https://en.contracovid.com

DISCUSSION OF NEONATAL UNIT STRATEGIES

Discussion Panel

- **Martin Schmidt, MD,** Pediatrics, St. Mary's Hospital, St. Louis
- Becky Boedeker, DNP, Newborn Nursery, St. Mary's Hospital, St. Louis
- **Katie Altoff-Moore,** BSN, Team Leader, Newborn Nursery, St. Mary's Hospital, St. Louis
- **Malika Shah, MD**, Newborn Nursery, Medical Director, Prentice Women's Hospital, Chicago
- **Justin Josephsen, MD**, Medical Director – St. Mary's Hospital NICU, Neonatologist Cardinal Glennon Children's Hospital, St. Louis
- **Leslie Caldarelli, MD,** NICU Director, Prentice Women's Hospital, Chicago

Dr. Josephsen: SSM Health St. Mary's Hospital, Saint Louis University, Cardinal Glennon, St. Louis

Dr. Caldarelli: Prentice Women's Hospital, Chicago

JUSTIN JOSEPHSEN, MD
LESLIE CALDARELLI, MD

INITIAL GUIDANCE: Management of Infants Born to Mothers with COVID-19 Date of Document: April 2, 2020

Karen M. Puopolo, M.D. Ph.D., Mark L. Hudak, M.D., David W. Kimberlin, M.D., James Cummings, M.D.

American Academy of Pediatrics Committee on Fetus and Newborn, Section on Neonatal Perinatal Medicine, and Committee on Infectious Diseases

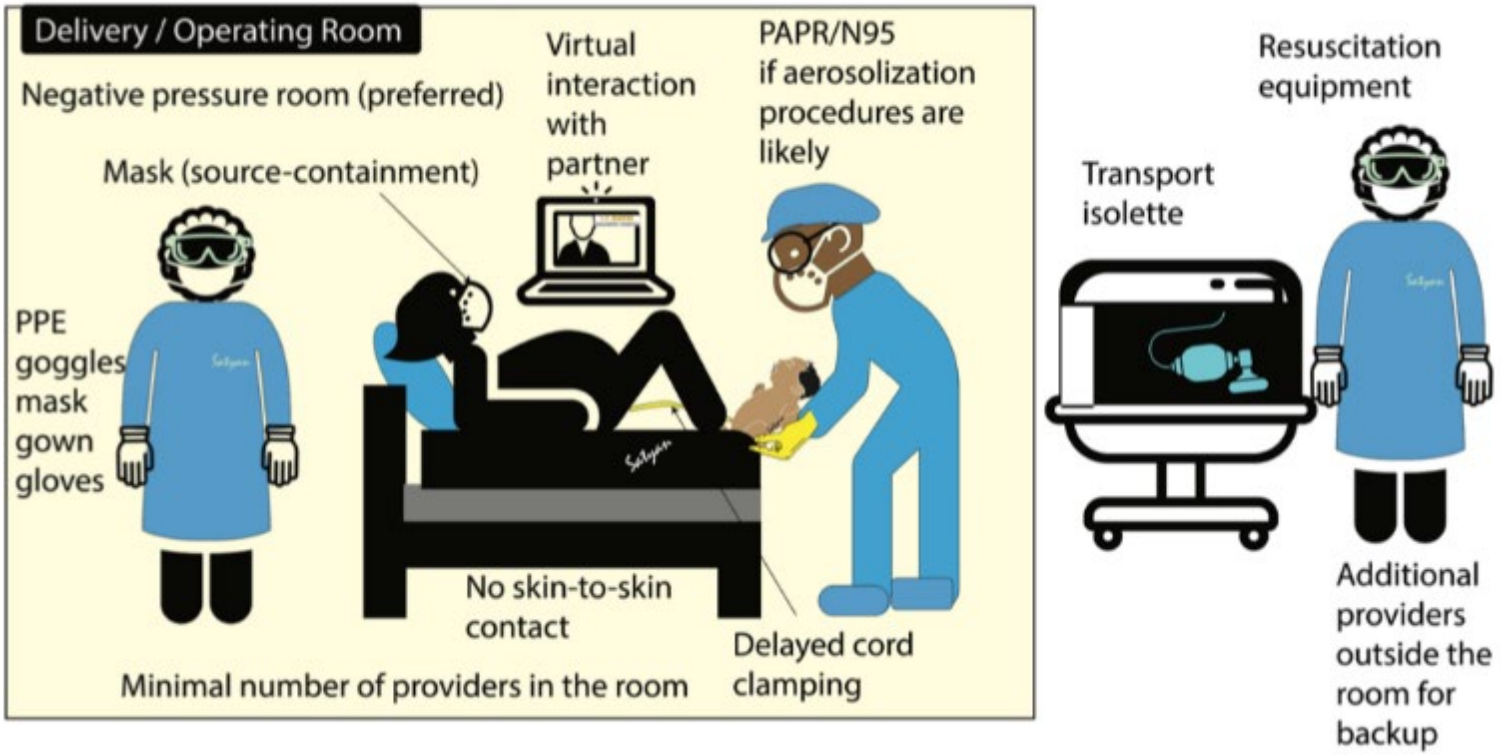
Perinatal Transmission and Infection

- Current evidence is consistent with low rates of peripartum transmission and is inconclusive about in utero transmission of SARS-CoV-2 from mothers with COVID-19 to their newborns.
- Neonates can acquire SARS-CoV-2 after birth. Their immature immune system leaves newborns vulnerable to other serious respiratory viral infections, raising concern that SARS-CoV-2 may cause severe disease among neonates.

Delivery Room Management of Neonates Born to COVID +/PUI Mothers

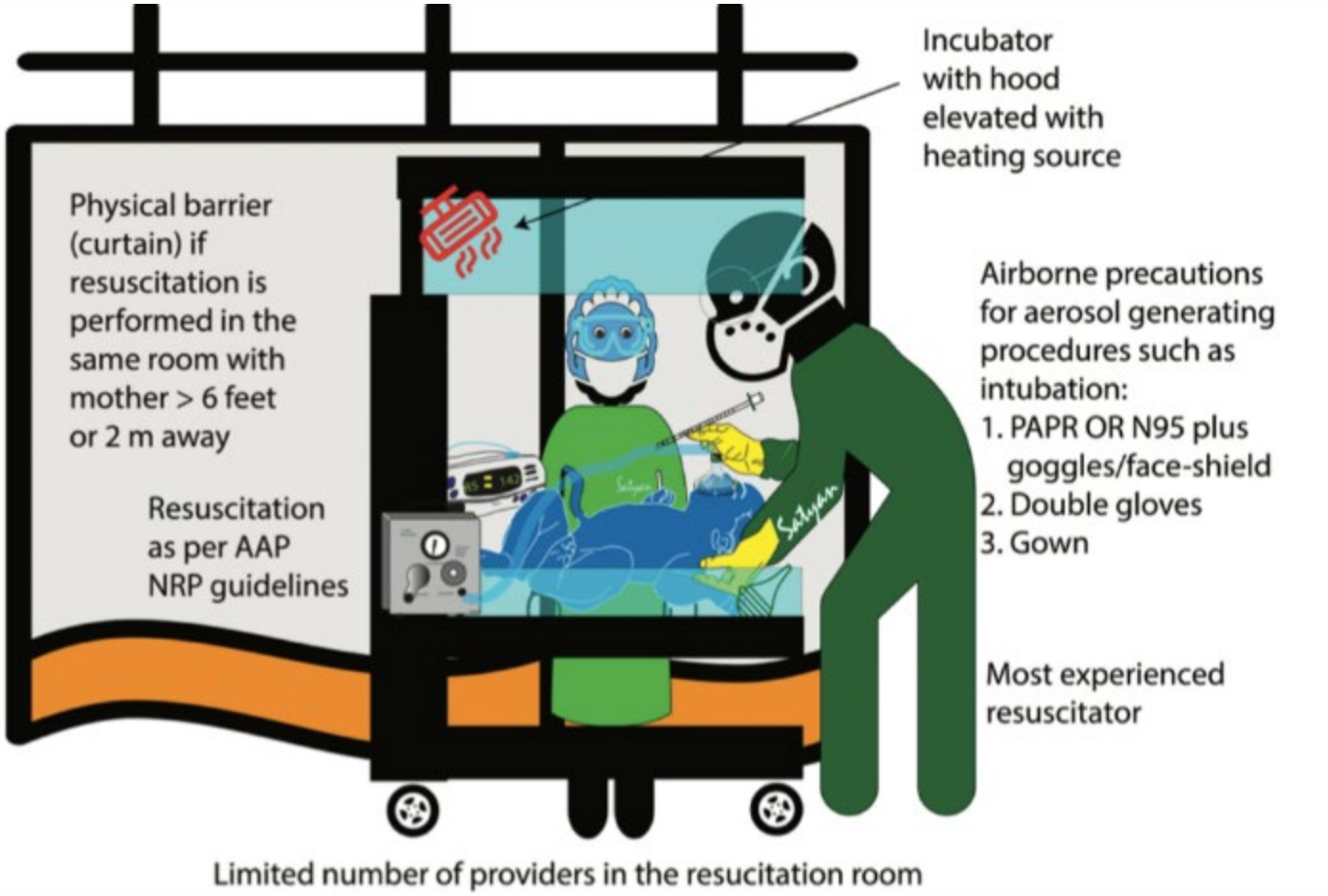
- Airborne, Droplet, and Contact Precautions should be utilized when attending deliveries due to the increased likelihood of maternal virus aerosols and the potential need to administer newborn resuscitation to infants that can generate virus aerosol.

Prescreen pregnant woman and partner/visitor prior to arrival at the hospital



Chandrasekharan, P., Vento, M., Trevisanuto, D., Partridge, E., Underwood, M. A., Wiedeman, J., … Lakshminrusimha, S. (2020).

Image Courtesy:
Satyan Lakshminrusimha.



Chandrasekharan, P., Vento, M., Trevisanuto, D., Partridge, E., Underwood, M. A., Wiedeman, J., … Lakshminrusimha, S. (2020).

Image Courtesy:
Satyan Lakshminrusimha.

Maternal and Newborn Separation

- Newborns should be separated at birth from mothers with COVID-19.
- Newborns should be bathed as soon as reasonably possible after birth to remove virus potentially present on skin surfaces.
- Clinical staff should use Droplet and Contact Precautions until newborn virologic status is known to be negative.

Alternative Newborn Care

- If the mother chooses to room-in with her infant rather than be separated; or if the center does not have the capability of caring for the infant in a separate area, the infant should remain at least 6 feet from mother at all times.
- Placing the infant in an air temperature-controlled isolette rather than in a bassinette, or using a physical barrier such as a curtain between the mother and infant, may afford greater infant protection.

Alternative Newborn Care

- If the mother also requests skin-to-skin contact with her infant, including direct breastfeeding, she should comply with strict preventive precautions, including the use of mask and meticulous breast and hand hygiene.
- Institutions could consider formal documentation of maternal decisions regarding the recommendations for separation.

Breast Milk Feeding

- SARS-CoV-2 has not been detected in breast milk to date.
- Mothers may express breast milk after appropriate breast and hand hygiene and this milk may be fed to the infant by designated caregivers.
- Breast pumps and components should be thoroughly cleaned in between pumping sessions using standard center policies that must include cleaning the pump with disinfectant wipes and washing pump attachments with hot soapy water.

Newborn Viral Testing

- Infants born to mothers with COVID-19 should be tested for SARS-CoV-2 at 24 hours and, if still in the birth facility, at 48 hours after birth.
- At each test, consider using swabs of throat and nasopharynx.

Newborn Birth Hospital Discharge

- Well newborns should receive all indicated care, including circumcision if requested. Well newborns should be discharged from the birth hospital based on the center's normal criteria.
- A newborn who has a documented SARS-CoV-2 infection or who remains at risk for postnatal acquisition of COVID-19 requires frequent outpatient follow-up via telephone, telemedicine, or in-person assessments through 14 days after discharge.
- Specific guidance regarding use of standard procedural masks, gloves and hand hygiene should be provided to all caretakers. Uninfected individuals >60 years of age and those with comorbid conditions should not provide care if possible.

Newborn Birth Hospital Discharge

- Infants with negative SARS-CoV-2 molecular testing should optimally be discharged to the care of a designated healthy, non-infected, caregiver.
- If the mother is in the same household, she should maintain a distance of at least 6 feet for as much of the time as possible, and when in closer proximity to the neonate should use a mask and hand hygiene for home newborn care until:

  -she has been afebrile for 72 hours without use of antipyretics, **and**

  -at least 7 days have passed since symptoms first appeared

  OR

  -she has negative results of a molecular assay for detection of SARS-CoV-2 from at least two consecutive nasopharyngeal swab specimens collected ≥24 hours apart

- Other caregivers who remain under observation for development of COVID19 should use standard procedural masks and hand hygiene when within 6 feet of the newborn until their status is resolved.

Special NICU Considerations

- Infants born requiring neonatal intensive care optimally should be admitted to a single patient room with the potential for negative room pressure. If this is not available, infants should be maintained at least 6 feet apart and/or placed in air temperature-controlled isolettes.
- Airborne, Droplet, and Contact Precautions and negative room pressure should be used for the care of infants requiring greater than 2L NC until newborn virologic status is known to be negative.
- For infants who require ongoing hospital care, centers may transition to the use of universal precautions if two tests obtained at least 24 hours apart are negative.
- For infants who are positive on their initial PCR testing, follow-up testing of combined specimens from the throat and nasopharynx should be done at 48-72 hour intervals until two consecutive negative tests.

NICU Visitation

- Mothers with COVID-19 should not visit infants requiring neonatal intensive care until they meet all the requirements outlined below:

  -Resolution of fever without the use of antipyretics for at least 72 hours **and**

  -Improvement, but not full resolution, in respiratory symptoms **and**

  -Negative results of a molecular assay for detection of SARS-CoV-2 from at least two consecutive nasopharyngeal swab specimens collected ≥24 hours apart

Non-maternal parents who are PUIs should not visit until they are determined to be uninfected by molecular testing and/or clinical criteria.

Non-maternal parents who develop symptoms of disease and are confirmed to have COVID-19 must also meet the requirements above before visiting infants in the neonatal intensive care unit.

Prentice Women's Hospital

MALIKA SHAH, MD

Neonatal Case 1

- Mother 26 y/o G3P1011 with neg serologies
- Husband in MICU, ventilated, tested COVID-19+
- Mother with cough x 10 days, improved, afebrile for greater than 3 days, admitted for spontaneous labor, did not qualify for testing previously
- Moderate cough noted by nurses, tested in L&D, COVID-19+
- SVD, uncomplicated, APGARS 9/9
- Robust discussion on placement of baby
    - Mother amenable to separation

Infant Care Birth-24 hours

- Placed in isolation room with nurse
- Nurse in appropriate PPE
- Received some formula while mother expressed
- Infant SGA (8%), blood sugars followed
- Asymptomatic visitor allowed, grandmother 1st came day of discharge

The 24 hour Baby Bundle

Cluster care when the newborn is getting 24 hour testing completed. This includes:

- PKU
- CCHD
- Initial weight on Postpartum, then q24
- Hepatitis B Vaccine

FOR COVID EXPOSED

Serum bilirubin & 24 hour swab for SARS-CoV2

Credits Hayley Gillespie, Shannon Dunne

Care at 25-72 Hours

- Repeat SARS-CoV 2 done at 48 hours
- After discussion with audiology, had hearing screen
- Discharged to grandmother with home instructions
- Pediatrician called
    - Made arrangements to see infant in office at first appointment of day with unexposed caregiver, everyone masked
- Discussed with multidisciplinary team: baby to stay with grandmother until mom asymptomatic
    - No cough x 24 hours
    - If coughing persists >14 days, mom may bring baby home at 14 days and use masking and good handwashing until cough is gone

Learning Points

- Where do we place baby in hospital?
    - No specific discussion of timing of symptoms/testing in relationship to delivery in AAP or CDC guidelines
    - What constitutes improvement of respiratory symptoms?
    - What is afebrile? What if test still positive?
    - If mother had not been tested, infant would have roomed in
- Hospital discharge to whom? What if mother and father ill or single parent?
- What arrangements should pediatrician have for follow-up?
- Is it OK to do hearing tests and circumcisions? Where? When?

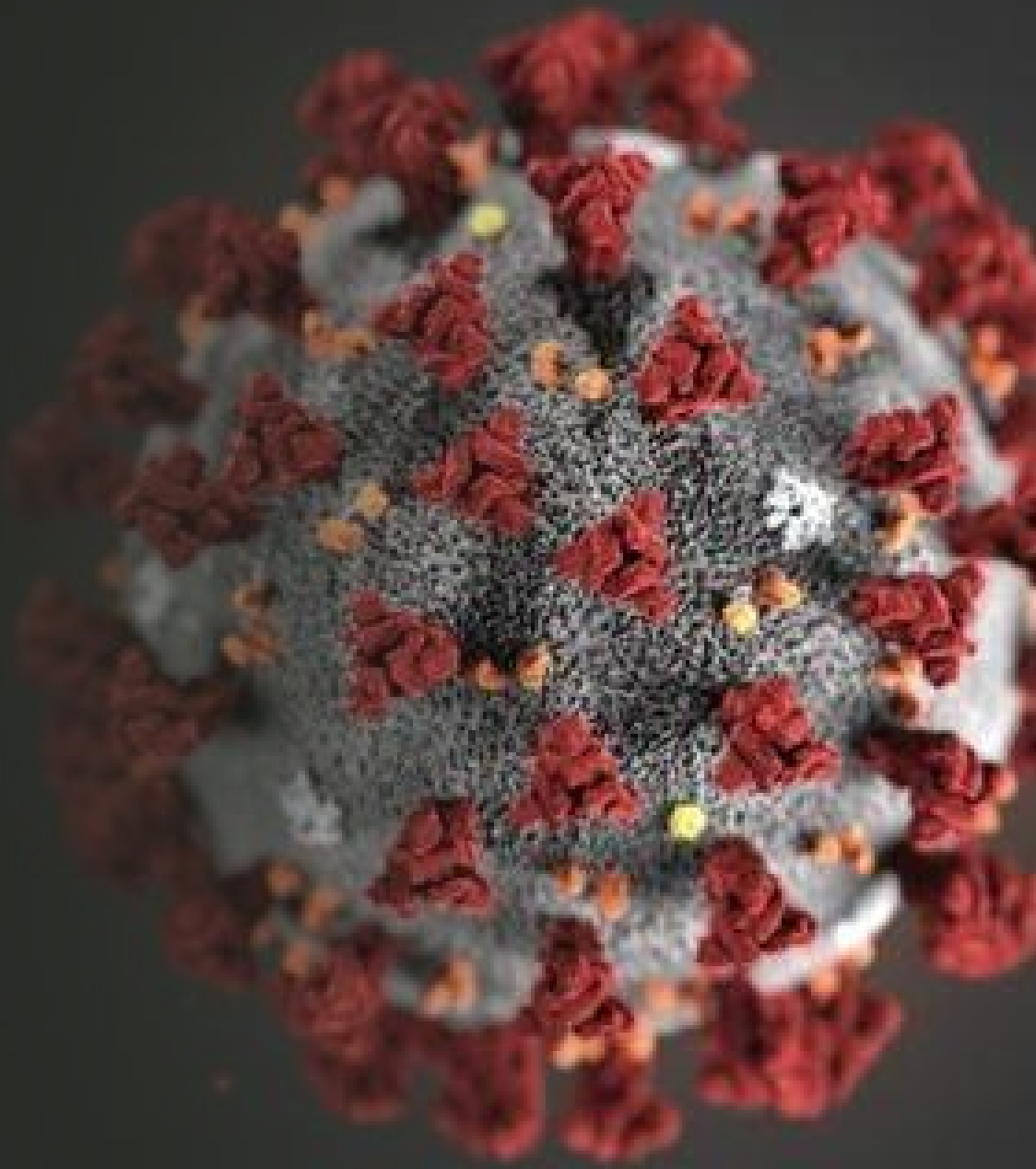
SSM Health St. Mary's Hospital- St. Louis

BECKY BOEDEKER, DNP
KATIE ALTHOFF-MOORE, BSN
MARTIN SCHMIDT, MD

Case Study:

Our First COVID-19 Positive Couplet

SSM Health St. Mary's – St. Louis



In Anticipation of Surge in COVID - 19 Positive Patients

Opened Dedicated OB COVID Unit

- Isolation rooms for triage
- Instituted a self-contained LDRP model
- Nursery – cohort healthy newborns if needed
- Multidisciplinary collaboration: OB, Peds, Lactation, Pharmacy, IT, nurses from three units.
- Decision was made to co-locate couplet if mother's condition allows.
  - Mom will be taking baby home in 24-48 hours
  - Will afford time to educate and model care to prevent infant exposure at home.
- Visitor policy – can have one support person who may not be readmitted if they leave, provide 3 meals a day for visitor

Case Overview

- Patient was verbally screened twice before arrival on the L&D unit and answered negative to all questions.
- She was admitted to a standard L&D room for expectant management.
- Private OB – reviewed chart and discovered she reported loss of taste and smell two days prior.
- Status changed to PUI and she was tested.
- Delivery staff were able to don appropriate PPE (Gown, gloves, N95 masks, face shield).

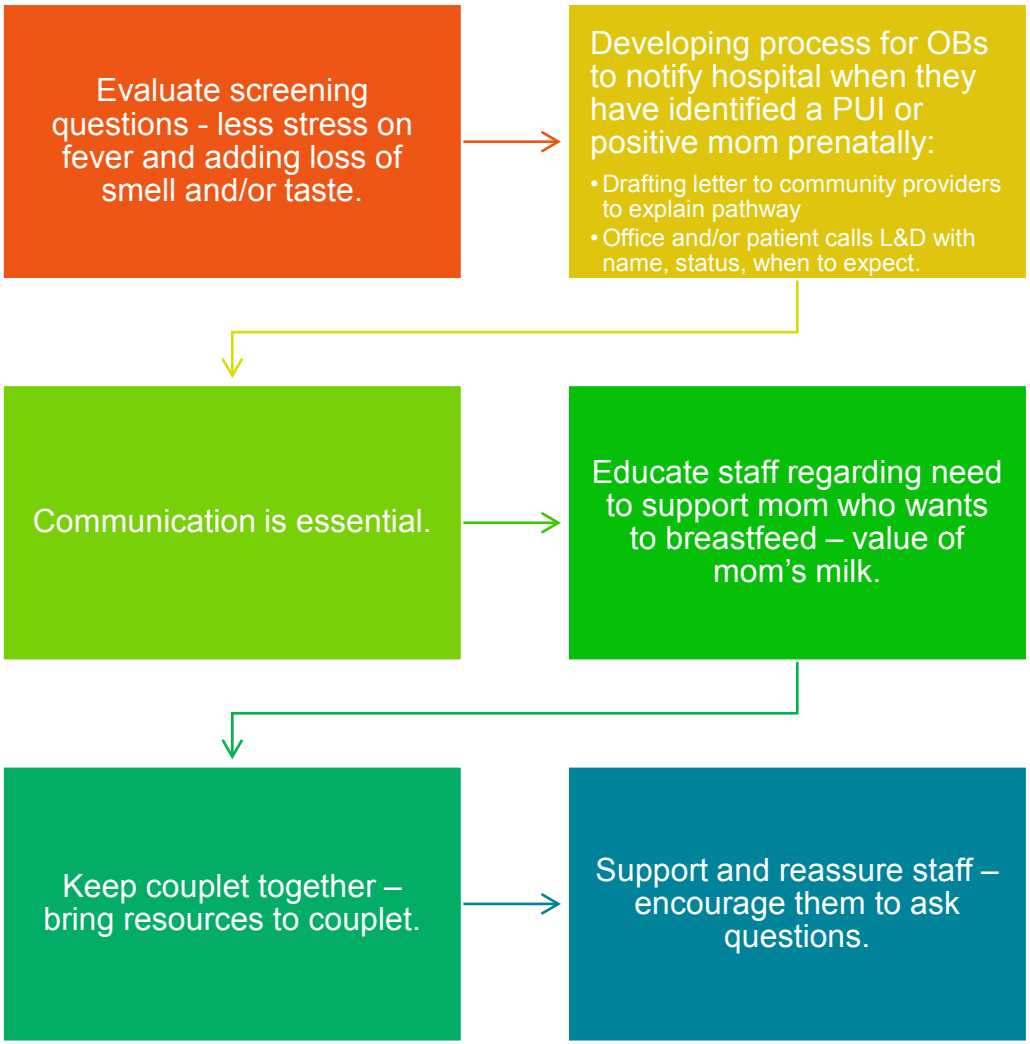
- Baby delivered vaginally, APGARs 5/8, and did not require any resuscitation.
- Mom was given a mask and baby was placed skin to skin.
- She requested to breastfeed and was assisted to do so.
- When recovery period was over, she was transferred to the OB COVID unit for postpartum care.
- The baby was not bathed before transfer.

Test Result Was Positive

- Pediatrician encouraged her to continue breastfeeding, after using proper hand hygiene and donning a mask.
- Chose to formula feed baby and pump (so she wouldn't make baby sick). She pumped infrequently and had staff feed baby formula.
- Baby roomed-in. With instructions to keep bassinette 6 feet from mom, with curtain in between, and wear a mask.
- Dad left the first night – was not able to keep baby behind curtain.
- Had trouble wearing mask continuously.

- Baby was SGA and had hypothermic episode the first night, so was kept for 48 hours before discharge.
- Sent home with newly-developed education materials:
  - Taking care of baby and breastfeeding while minimizing chance of infecting baby.
  - General guidelines for family experiencing COVID
  - Two cloth masks with instructions for use.

Lessons Learned



More Questions after routine Follow-up phone call Three Days Post-Discharge

- Mom is isolated at home with baby. Has two other children and no additional help. Seventy-year-old grandmother staying in her own room.
- Dad did not get any discharge information – was not there at discharge. Thinks staying away is better.
- Using manual breastpump, pumping occasionally, feeding baby EBM and formula per bottle.
- Baby has not seen Pediatrician; appointment is scheduled for 8 days post-discharge.
- Mom experiencing extreme fatigue and weakness.
- Has had no contact with her provider and no follow-up planned until 6 weeks postpartum.

Lessons Continue

Need to follow-up day after discharge:

- To ensure appointments have been made and facilitate as needed.
- Check on infant wellbeing and mom's physical/mental status
- Facilitate connections to resources

Additional education for families to understand needs of mom and baby at home.

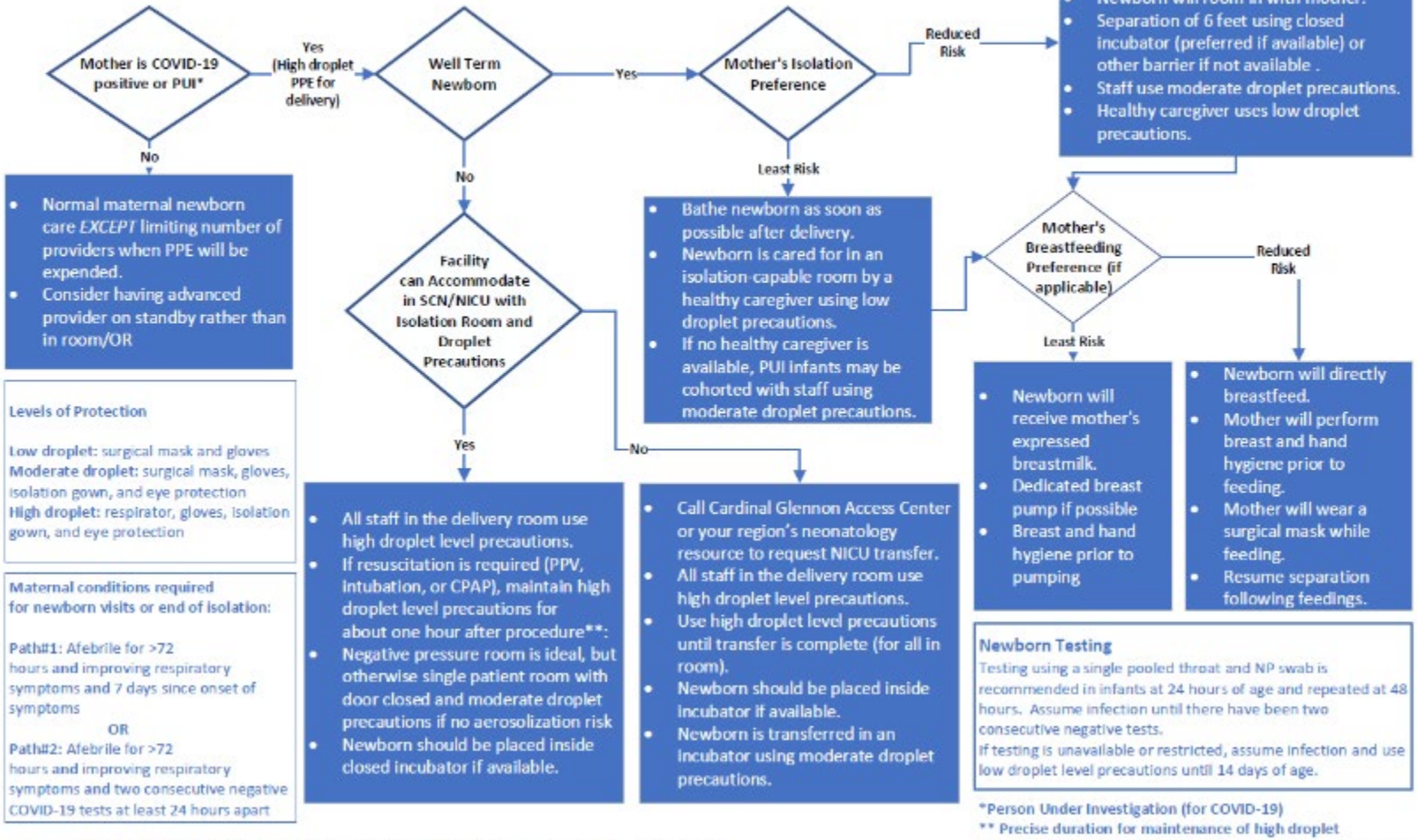
Seek primary f/u care for mom with positive COVID diagnosis.

SSMHealth

Attachment B

COVID19 Newborn Workflow

Last Update: April 9, 2020



Levels of Protection

Low droplet: surgical mask and gloves
Moderate droplet: surgical mask, gloves, isolation gown, and eye protection
High droplet: respirator, gloves, isolation gown, and eye protection

Maternal conditions required for newborn visits or end of isolation:

Path#1: Afebrile for >72 hours and improving respiratory symptoms and 7 days since onset of symptoms

OR

Path#2: Afebrile for >72 hours and improving respiratory symptoms and two consecutive negative COVID-19 tests at least 24 hours apart

Newborn Testing

Testing using a single pooled throat and NP swab is recommended in infants at 24 hours of age and repeated at 48 hours. Assume infection until there have been two consecutive negative tests.
If testing is unavailable or restricted, assume infection and use low droplet level precautions until 14 days of age.

*Person Under Investigation (for COVID-19)
** Precise duration for maintenance of high droplet protection depends on the room and is determined by plant operations

- **AAP Guidelines:** https://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/
- **CDC Guidelines:** https://www.cdc.gov/coronavirus/2019-ncov/index.html
- **British Perinatal Association Recommendations:** https://www.rcpch.ac.uk/resources/covid-19-guidance-paediatric-services

NEONATAL QUESTIONS/DISCUSSION

Neonatal Questions/Discussion

- Questions from 4.3.2020 webinar
- Questions from 4.10.2020 registration
- Questions from chat box

DISCUSSION OF OB UNIT STRATEGIES

OB Discussion Panel

- **Jean Goodman, MD,** Maternal Fetal Medicine, Loyola University Medical Center
- **Emily Miller, MD,** Maternal Fetal Medicine, Northwestern Memorial Hospital
- **Abbe Kordik, MD,** OB/GYN, University of Chicago Medical Center
- **Rob Abrams, MD,** Executive Director - SIU Center for Maternal - Fetal Medicine, HSHS St. John's Hospital, Springfield

Maternal Fetal Medicine, Loyola University Medical Center

JEAN GOODMAN, MD

Loyola University Medical Center (LUMC) & COVID19 in Pregnancy

LUMC

- Maywood, Illinois Level III + RPC/Level 1 Trauma Center
- Highest AS in Illinois
- Obstetrics: 1400+ per year 80% with at least 1 comorbidity
- L&D Unit: 6 LDR, 6 sub-ICU rooms (no vent), 1 small two bed triage

Loyola University Medical Center (LUMC) & CoVID19 in Pregnancy

- **LUMC COVID19 Screening & Testing as of 3/25**:
  - Flow through ER screen – criteria for testing – needed 3 criteria met:

    1.Fever

    2. Signs/symptoms (particularly respiratory)

    3. Any of the following (contact with laboratory confirmed COVID-19 patient, any travel, congregate living, significant medical risk factors (**pregnancy,** diabetes, cardiac disease, chronic pulmonary disease, immunocompromised, age > 65, known or potential major public health exposure)
  - To L&D if >20 weeks, MFM permitted to order with above criteria when evaluated on L&D
- **COVID19 L&D plan fluidity:**
  - 3/23 For PUI and CoVID 19+ Level 2 PPE at second stage, vaginal delivery, Csection, aerosolizing procedure otherwise Level 1 PPE
  - 3/29 Masking discussion, encouraged for staff but not universal use
  - **4/3 Universal masking/eye protection, Universal Level 2 PPE second stage, vaginal delivery, Csection, aerosolizing procedure**

Case1: CoVID19 Postop Day 5

Illinois Perinatal Quality Collaborative

- **41 yo Primip received PNC at Loyola AMA ,BMI 48 kg/m2 & GDMA2**
- 1/7 25 weeks URI (sore throat, congestion, dry cough)
- 3/22 husband fever and cough –did not seek care/no testing
- 3/29 36wk6d ROM, labor, Csection. Dry cough, afebrile O2Sat 100%. Admit WBC 6.8 HB 10.9 Plt 173,000 POD1 WBC 8.8 Plt 135,000 HB 9.5. Baby to NBN, surgery uncomplicated. POD1 WBC 8.8 HB 9.5Plt 135,000 4/2 POD4 DC with baby
- 4/3 POD5 brought baby to WNB check complained of anxiety cough, SOB, & insomnia. 02 Sat 92-95% RA p90 BP 116/71 R22 thought PE called 911
- 4/3 ER visit SOB, anxious WBC 14.7 lymphopenic, HB 10.3, Plt 333,000 BNP 62 LDH 527 procalcitonin 0.16 d-dimer 5940 CR 0.81 Alt/AST O2Sat 96% on RA
- 4/3 CXR diffuse bilateral interstitial opacities c/w infection CT diffuse ground glass opacities
  - Ceftriaxone, doxycycline, prophylactic heparin
  - CoVID positive 4/4 plaquenil added for five days
  - never hypoxic
- 4/5 home & 4/8 phone visit, patient and baby doing well
- **26 HCW exposed, 1 positive, day 7 post exposure**

3/29 *Masking discussion, encouraged for staff but not universal use* →

4/3 → *Universal masking/eye protection, Universal Level 2 PPE second stage, vaginal delivery, Csection, aerosolizing procedure*

Case1: Lessons Learned

- CoVID19: *The Trojan Horse of Pregnancy*
- 30% risk of asymptomatic presentation + substantial comorbidity population at risk
  - Universal masking & eye protection with change to…
  - Universal Level 2 PPE during second stage, vaginal delivery, at Csection, and all aerosolizing procedures
- Case justified our decisions, but just short of preventing a large HCW exposure event

Case2: COVID19 at 34 weeks

- 26 year-old G4P3003 @ 34wk2d on 4/4 with body aches, SOB, ? Fever at home but no thermometer, and loss of taste & smell X 4 days. In ER afebrile, with p95 RR20 and O2 sat 98% on RA.
  - CXR: possible infectious/inflammatory process in R mid lung.
  - Labs: WBC 5.2 Ddimer 2076
- **Did not meet ER CoVID test criteria, transferred to L&D original to non CoVID designated room, rx'd as PUI given multiple complaints voiced** and room change. RX Rocephin and Azithromycin. **CoVID19+ on testing.**
- Home 48 hours, no O2 requirement, not candidate for plaquenil, on amoxicillin and azithromycin for 7 days. Self-isolate 14 days.

Case 2: Lessons Learned

- **Pregnant PUI ≠ Non-Pregnant PUI**
- On 4/3 when changed our PPE plan we also changed our PUI criteria on OB Unit:
  - All scheduled and unscheduled patients and their support person will be routinely screened for signs/symptoms of COVID19 prior to entry in to our unit if:

    Fever > 100.4 without another clear etiology, or

    New cough or Shortness of breath

  -or two of the following-

    body aches, chills, new onset vomiting after 1st trimester, diarrhea loss of sense of taste or smell, or itchy/painful/red eyes (unrelated to seasonal allergies)
- **If above, placed in designated COVID room & in absence of a clear alternative diagnosis patient will be swabbed for COVID19 and treated as a PUI.**

Maternal Fetal Medicine, Northwestern University

EMILY MILLER, MD

Northwestern Medicine®

Prentice Women's Hospital

12,500 deliveries per year
32 LDR
8 prep/hold/recovery rooms
14 OB triage rooms
4 ORs

Prentice Women's Hospital COVID 19 Strategies

- Contained COVID 19 OB Unit
  - Opened 3/23/20
  - Prentice 9S
  - OB triage, AP, L&D, PP
  - Created 8 negative pressure rooms (with option to flex up to 16 rooms)
  - Staffing: OB Attending, OB Anesthesiologist, L&D Nursing
  - Daily phone consult with MICU and ID
  - Patients evaluated: 40
  - COVID 19 positive: 15
  - Deliveries: 5

Prentice Women's Hospital COVID 19 Key Strategies

- **COVID 19 Testing:** moved to Universal testing all patients L&D with 2 hour test result turnaround (sensitivity 80%)
- **PPE:**
  - **Before universal testing all L&D:** universal PPE on L&D for all staff with N95 mask and face shields for all 2nd stage and cesarean delivery and all other aerosolizing procedures
  - **After Universal Testing all L&D:** surgical masks / eye protection but no longer using n95 for 2nd stage / cesarean with all patients with negative COVID19 test
- **PUI Testing OB patients:** Before Universal Testing
  - Fever > 100.4 without another clear etiology, or New cough or Shortness of breath
  - or two of the following: body aches, chills, new onset vomiting after 1st trimester, diarrhea, loss of sense of taste or smell, or itchy/painful/red eyes (unrelated to seasonal allergies)

Case 1: Determining COVID 19 Resolution

CDC Centers for Disease Control and Prevention

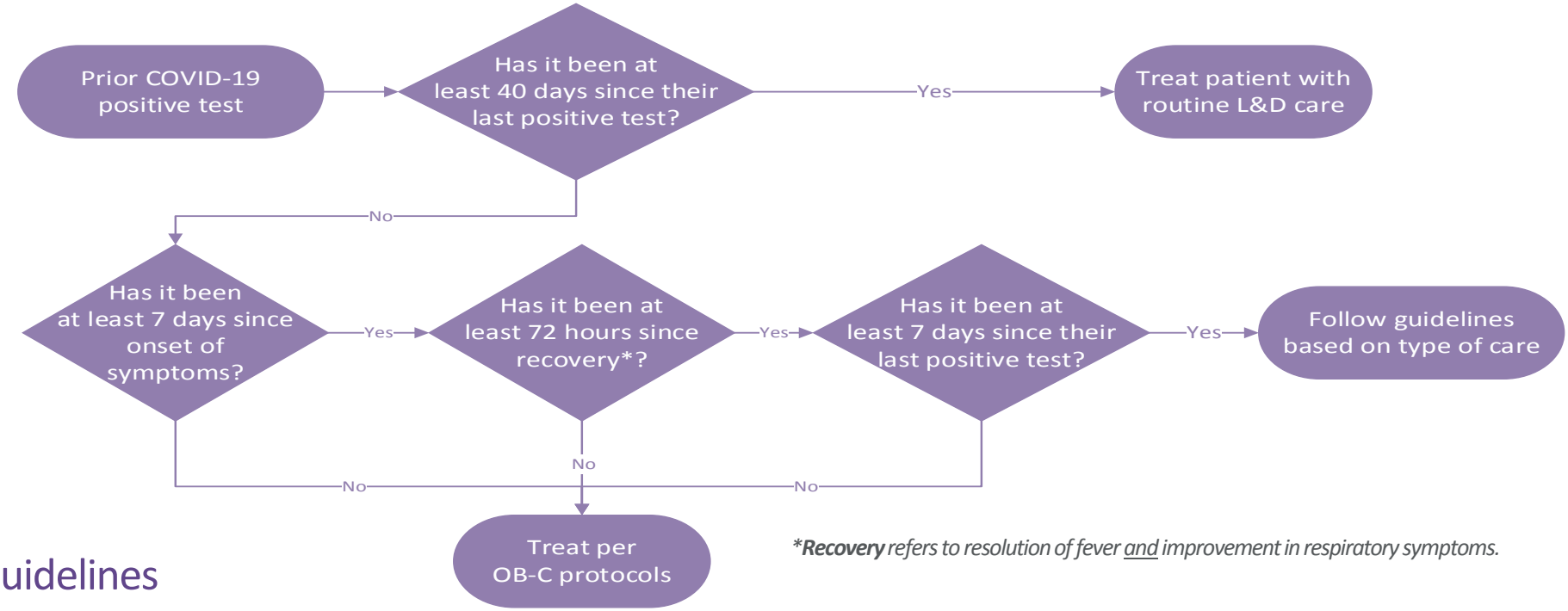
1. *Test-based strategy.*
   - Resolution of fever without the use of fever-reducing medications **and**
   - Improvement in respiratory symptoms (e.g., cough, shortness of breath), **and**
   - Negative results of an FDA Emergency Use Authorized COVID-19 molecular assay for detection of SARS-CoV-2 RNA from at least two consecutive nasopharyngeal swab specimens collected ≥24 hours apart (total of two negative specimens) [1]. See Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens for 2019 Novel Coronavirus (2019-nCoV).

2. *Non-test-based strategy.*
   - 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*

Case 1: Lessons Learned - Determining COVID Resolution

Prior COVID+ Test Protocol

Last Updated: 04/07/2020



**Recovery* refers to resolution of fever and improvement in respiratory symptoms.*

Guidelines

Outpatient Care	L&D	Postpartum (7-14 days since symptom onset/positive test)	Postpartum (>14 days since symptom onset/positive test)
• Patient masked on entry • Droplet precautions	• Patient wears mask (as tolerated) • Droplet precautions for labor • Droplet precautions + N95 for 2nd stage/delivery • Cesarean in regular OR • Healthy visitor permitted (with mask)	• Infant admitted to NICU TEAM 3 • Baby rooms in but efforts made to minimize direct maternal/infant contact • Patient wears mask • Strict hand hygiene w/newborn care • Newborn screening occurs in the room • Droplet precautions • Healthy visitor permitted (with mask)	• Infant admitted to PCP • Baby rooms in • Patient wears mask • Droplet precautions • Healthy visitor permitted (with mask)

Case 1: Determining COVID Resolution

- 26yo G3P2012 @ 38w3d
- Husband with COVID-19 in MICU

- Symptoms of COVID started 9d prior to arrival
  - Mild symptoms – testing not performed as presumed positive

- Afebrile
- Cough improved, but persistent

- 39yo G1P0 @ 39w5d

- Symptoms of COVID started 13d prior to arrival; tested positive at that time

- Afebrile
- Cough improved, but persistent

University of Chicago Medical Center

ABBE KORDIK, MD

University of Chicago Medical Center OB Strategies

- Inpatient Resource

- Outpatient / Triaging Resource

Director of Obstetrics – South Central Illinois Perinatal Center

ROBERT M. ABRAMS, MD

SIU Obstetric COVID 19 Resources

- SIH COVID Simulations: Antenatal Admission, Labor & Vaginal Delivery, and Cesarean Delivery (4.2.2020)
- SIU L&D Checklist: Admission of COVID-19 + Patient or PUI (4.9.2020)
- SIU COVID + and PUI Education for Huddles (4.7.2020)
- SIU COVID-19 Outpatient Management (Shared 4.10.2020)

SIU: L&D Checklist Admission of COVID19 patient or PUI (4.9.20)

IL PQC Illinois Perinatal Quality Collaborative

L&D Checklist: Admission of COVID19+ Patient or PUI

- ☐ Contact the Incident Command Center (x76697)
- ☐ Nurse management/NICU/Anesthesia/ICU notified
- ☐ Negative pressure room
- ☐ Contact/Droplet precaution sign on door
- ☐ Sign on door listing healthcare providers (phone/pager)who may enter room - limit entries
- ☐ Appropriate PPE
  - ☐ Yellow gown
  - ☐ Gloves
  - ☐ PAPR / N-95
  - ☐ Eye protection
- ☐ Sign saying "No nitrous, no O2 for fetal indications"
- ☐ Check CBC w/diff, CMP, LDH, PT, PTT, lactate
- ☐ Swabs for viral respiratory panel, influenza
- ☐ Chest x-ray
- ☐ Continuous pulse ox, goal O2 ≥ 95%. If any O2 needed, notify attending physician.
- ☐ Call ICU if requiring more than 4 liters NC to achieve O2 sat goal, has increased work of breathing or increased SOB
- ☐ Close fetal monitoring (consider continuous if on O2)

- ☐ PPE protocol for delivery
  - ☐ Hand wash/scrub
  - ☐ Hair bouffant
  - ☐ Booties
  - ☐ PAPR if vaginal delivery, N-95 if CS
  - ☐ Eye protection
  - ☐ Surgical gown
  - ☐ Sterile gloves
- ☐ Medication management
  - ☐ IVF - be conservative
  - ☐ Consider empiric oseltamivir
  - ☐ Avoid routine betamethasone. Discuss with MFM.

HSHS St. John's Hospital
SIU School of Medicine
South Central Illinois Perinatal Center
Updated 4.9.2020

Pregnant COVID+ or PUI,
Presenting to ED or OB ED

HSHS St. John's Hospital
SIU School of Medicine
South Central Illinois Perinatal Center
Updated 4.9.2020

CONSIDERATION FOR OUTPATIENT MANAGEMENT

ASSESS SYMPTOMS AND OVERALL APPEARANCE

NONE OF FOLLOWING:
SEVERE SOB, DEHYDRATION,
APPEARS AGITATED,
INCREASED WORK OF BREATHING

CHECK CBC DIFF, CMP, CXR

CXR NORMAL
WBC >4 AND <15
PLATELETS >100
LFTS NORMAL OR MILDLY ELEVATED
CREATININE NORMAL

VITALS, INCLUDING O2 SAT AND FHR ASSESSMENT

PULSE < 110
O2 SAT > 95% ON ROOM AIR
RR < 22
FHR APPROPRIATE FOR GA

ASSESS COMORBIDITIES

NO SIGNIFICANT ACTIVE COMORBIDITIES

ALL CRITERIA MET, PLUS PATIENT IS RELIABLE AND MOTIVATED TO MONITOR AT HOME:

REASONABLE TO DISCHARGE WITH PRECAUTIONS, CLOSE PHONE FOLLOW-UP

***This flowchart is meant to serve as a guideline. It is not applicable to all situations, and clinical judgement is needed.**

Updated OB/Neo Resources

- SMFM/ACOG: Outpatient Assessment and Management for Pregnant Women With Suspected or Confirmed Novel Coronavirus (COVID-19) (3.13.20)
- SMFM Guidance for COVID-19 (3.19.20)
- Strategies to reduce risk from work to families at home (3.26.20)
- AJOG: COVID-19 In Pregnancy Early Lessons (3.27.20)
- SMFM, ACOG, AAFP, and ACNM Statement; Patient-Centered Care for Pregnant Patients During COVID-19 Pandemic (3.30.2020)
- ACOG/SMFM Clarify CDC's Recommendations on Use of PPE (3.31.2020)
- AAP- FAQs: Management of Infants Born to Mothers with Suspected or Confirmed COVID-19 (4.2.2020)
- AAP- Initial Guidance: Management of Infants Born to Mothers with COVID-19 (4.2.2020)
- AJOG: COVID-19 infection among asymptomatic and symptomatic pregnant women: Two weeks of confirmed presentations to an affiliated pair of New York City hospitals (4.7.2020)

OB Questions/Discussion

- Questions from 4.3.2020 webinar
- Questions from 4.10.2020 registration
- Questions from chat box

Thank You

- We continue to give thanks to the nurses, doctors, health care workers, public health teams and others across our state at work confronting the COVID-19 pandemic.
- Please send questions, comments and recommendations for future COVID-19 OB/Neo discussion webinars to info@ilpqc.org
- Recording of this webinar will be available at www.ilpqc.org

THANKS TO OUR

FUNDERS

IDPH
Illinois Department of Public Health

CDC
Centers for Disease Control and Prevention

DHS
Illinois Department of Human Services

JB & MK PRITZKER
Family Foundation

Email info@ilpqc.org or visit us at www.ilpqc.org

ADDITIONAL RESOURCES

IDPH: Recommended Guidance for the Care of Pregnant Women and Newborns During the COVID-19 Pandemic

Version 1.0 (3.30.2020)

3/30/20 IDPH RECOMMENDED COVID-19 GUIDANCE FOR CARE OF PREGNANT WOMEN & NEWBORNS

Prehospital Considerations

- Pregnant patients COVID-19 confirmed, Persons Under Investigation (PUIs), or any active symptoms of COVID-19: notify OB unit prior to arrival, facility can make appropriate infection control preparations before patient arrival
- Confirmed COVID-19 or PUI is arriving via transport by EMS: driver contact ED to follow local or regional transport protocols
- Healthcare providers should notify infection control personnel at their facility of anticipated arrival of pregnant patient who is COVID-19 confirmed or PUI

During Hospitalization

- Healthcare facilities to ensure recommended infection control practices for hospitalized pregnant patients who have COVID-19 or PUI are consistent with CDC Interim Infection Prevention & Control Recommendations
- Healthcare facilities should follow above infection control guidance on managing visitor access
- Infants born to mothers with confirmed COVID-19 should be considered PUIs. As such, infants should be isolated according to above recommendations

Mother/Baby Contact

- To reduce the risk of transmission of the virus that causes COVID-19 from the mother to the newborn, facilities should consider temporarily separating (e.g., separate rooms) the mother who has confirmed COVID-19 or is a PUI from her baby until the mother's transmission-based precautions are discontinued, as described in the Interim Considerations for Disposition of Hospitalized Patients with COVID-19.
- The decision to discontinue temporary separation of the mother from her baby should be made on a case-by-case basis in consultation with clinicians, infection prevention and control specialists, and public health officials.

Breastfeeding

- During temporary separation, mothers who intend to breastfeed should be encouraged to express their breast milk to establish and maintain milk supply. If possible, a dedicated breast pump should be provided.

- If a mother and newborn do room-in and the mother wishes to breastfeed, she should put on a facemask and practice hand hygiene before each feeding.

Hospital Discharge

- Discharge for postpartum women should follow recommendations described in the Interim Considerations for Disposition of Hospitalized Patients with COVID-19.
- For infants with pending testing results or who test negative for the virus that causes COVID-19 upon hospital discharge, caretakers should take steps to reduce the risk of transmission to the infant, including following the Interim Guidance for Preventing Spread of Coronavirus Disease 2019 (COVID-19) in Homes and Residential Communities.