Numbers Update from Johns Hopkins University, as shared by Evidence Based Birth

As of 10 AM EDT Monday April 6th, there were 1.29 million confirmed cases of COVID-19 around the world.

New Practice Guidelines out this Week

AAP Guidelines

- On April 2, **the American Academy of Pediatrics (AAP)** released guidance on infants born to mothers with **suspected or confirmed COVID-19** (Puopolo et al. 2020)
    - The full report and Q&As address topics including precautions for birth attendants, rooming-in, breastfeeding, testing, newborn intensive care, visitation and hospital discharge
    - They note that COVID-19 infection does not appear to be as serious for the pregnant person as infection with the coronaviruses that cause SARS and MERS, or infection with influenza
    - Evidence suggests that there is low risk of transmitting the virus to the baby during birth. It is still inconclusive whether the virus can pass from mother to baby during pregnancy (in utero)
    - **Personal protective equipment precautions**:
        - Wear gown, gloves, standard mask and eye protection (either face shield or goggles) during contact with infants born to mothers with COVID-19
        - Wear gown, gloves, and N95 respirator mask with eye protection or air-purifying respirator for aerosol-generating procedures with infants born to mothers with COVID-19 (e.g., newborn resuscitation)
        - Risk-assessment decisions may be necessary in centers with shortages of PPE
    - **Delivery room precautions**:
        - Institutions may reevaluate mandatory attendance policies by the neonatal team at low-risk births, and instead have the neonatal team “standby” to conserve PPE
        - Routine newborn care may need to be administered in a location separate from the infected mother
    - **Maternal and newborn separation when infection is suspected or confirmed**:

        - They state, “While difficult, temporary separation of mother and newborn will minimize the risk of postnatal infant infection from maternal respiratory secretions.”
        - They point out that all of the published research to date on newborns born to mothers with COVID-19 involves separation at birth, so we don’t actually know much about the risk of keeping infected parents together with their infants.
        - The exact wording in the report is, “**The likely benefits of temporary maternal and newborn separation at birth for decreasing the risk of newborn infection should be discussed with the mother, optimally prior to delivery.**” They add that the benefits of separation may be greater in mothers with more serious illness. So, the APP is recommending separation as standard practice, but the parent is free to accept or decline this recommendation after a discussion.
        - It’s disappointing that they mention discussing the “likely benefits” of separation but not the documented harms of mother-baby separation (which we discuss in our Evidence Based Birth® Signature Article here)
        - After separation, the AAP recommends that healthy infants be admitted to areas that are physically separate from infants born to mothers without COVID-19. Ideally, infants requiring NICU should be admitted to a single patient room with an air filtration system.
        - The newborns should be bathed as soon as possible to remove virus potentially on the skin
    - **Maternal and newborn rooming-in:**
        - If the parent chooses to room-in rather than be separated, or if the facility is not able to care for the infant in a separate area, then they propose recommendations for “alternative newborn care.”
        - The infant should be at least 6 feet from the mother at all times, with a physical barrier (a curtain or isolette), and direct breastfeeding is not recommended
    - **Breastfeeding:**
        - There is no evidence that the virus that causes COVID-19, SARS-CoV-2, is present in breast milk. The AAP affirms that there are known benefits of breastfeeding, and that “mothers’ milk may provide infant protective factors after maternal COVID-19.”
        - Infected mothers may express milk (with careful hygiene) and “designated caregivers” may feed the milk to the

infant. OR, **"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."

- At Evidence Based Birth®, **we've created a Sample Informed Consent Form for Refusal to Separate Birthing Parent and Infant that you can access here**

- **Testing and hospital discharge**:
  - The AAP recommends that infants born to mothers with COVID-19 should be tested at 24 hours and 48 hours after birth; if testing is not possible, infants should be treated as though they are positive for a 14-day observation period
  - **If the infant is positive with no symptoms**: outpatient follow-up through 14 days after discharge
  - **If the infant is negative:** discharge the infant to a healthy caregiver
  - **After the infected mother is discharged**, she is advised to maintain a distance of at least 6 feet from the newborn (or if that is not possible, use a mask and hand-hygiene for newborn care) until (a) she has not had a fever for 72 hours without use of medication, and (b) at least 7 days have passed since symptoms first appeared
  - **If the newborn remains in the hospital**, the mother should remain separated until (a) she has not had a fever for 72 hours without use of medication, and (b) her respiratory symptoms are improved, and (c) she has had consecutive negative test results (collected ≥24 hours apart)
  - "Non-maternal parents" (i.e. parents who did not give birth) should also not visit infants in the hospital until they are determined to not be at risk of infection

Comparison of AAP Guidelines with Other Practice Guidelines

- The APP's recommendation to separate infected mothers from their infants is in line with Chinese officials, and Centers for Disease Control and American Congress of Obstetricians and Gynecologists guidance in the U.S.
- However, many other organizations including the World Health Organization, UNICEF, Royal College of Obstetricians and Gynaecologists in the United Kingdom, and the Society of Obstetricians

and Gynaecologists of Canada advise keeping mothers and babies together with precautions
- On April 3, the Italian Society of Neonatology endorsed by the Union of European Neonatal & Perinatal Societies published guidance recommending rooming-in and direct breastfeeding with COVID-19 positive mothers who have few or no symptoms (Davanzo et al. 2020). They advise separation and expressed breast milk when the mother is too sick to care for the newborn.

Research on Homemade Masks

- On April 3, the U.S. Centers for Disease Control (CDC) made a major change to their recommendations. **They now recommend that everyone wear a "cloth face covering" while in public.** Before last week, the recommendation was to not wear a mask unless sick, caring for a sick person who is unable to wear one, or working in health care.
    - **Why the change?** There is increasing evidence that infected people without symptoms (pre-symptomatic and asymptomatic carriers) can spread the SARS-CoV-2 virus (the virus that causes COVID-19).
    - The CDC urges people to not use medical-grade masks (surgical masks or N95 respirators) because they are desperately needed in clinical settings right now.
    - They stress that wearing a cloth face covering is not a safe alternative to social distancing (maintaining a distance of 6 feet or more from people in public). But in situations where it is not possible to keep your distance from others (e.g. grocery stores, sidewalks), a cloth face covering offers some protection. Masks can also function as an important **visual cue**, reminding others to follow public health guidance.
    - Masks can be a source of infection when not removed correctly. A study published in the Lancet on April 2 found that the SARS-CoV-2 virus could be **detected on cloth for at least a day and on the outer layer of a surgical mask for up to a week** (Chin et al. 2020). So, it's important to not touch your face or the front of the mask. Remove the straps from behind your ears and wash hands immediately after.

Are homemade cloth face coverings effective?

- The main benefit of covering your nose and mouth is that **you help to protect others if you happen to be contagious, but you don't feel sick.** If you cough or sneeze, the mask helps to contain your respiratory droplets.

- A secondary benefit is that face coverings also help to protect the wearer from exposure to respiratory droplets. For example, if an infected person sneezed as they were passing you on the sidewalk, your face covering would help to block the droplets. The CDC says, “Homemade masks should ideally be used in combination with a face shield that covers the entire front (that extends to the chin or below) and sides of the face.” We don’t have evidence on this, but wearing sunglasses or eyeglasses might be better than no eye protection.
- **There has only ever been one published randomized controlled clinical trial on cloth masks** (MacIntyre et al. 2015). The trial included 1,607 healthcare workers (HCWs) at 14 hospitals in Vietnam. Selected high-risk wards were randomly assigned to medical masks, cloth masks, or a control group (usual practice, which often included wearing medical masks). **Cloth masks were made of two layers of cotton. The HCWs who wore cloth masks acquired more respiratory infections and influenza-like illnesses than those who wore medical masks.** Lab tests showed that an astounding 97% of particles got through the cloth masks, compared to 44% with medical masks. The authors concluded that cloth masks should not be recommended for HCWs. They say that further research is needed to assess different types of cloth masks (perhaps with better filtration) and consider the effects of different cleaning methods.
    - **The authors of this 2015 RCT published a response to their article in the BMJ Open on March 30, 2020.** They say that they have been getting daily emails from HCWs concerned about using cloth masks. The authors recommend that HCWs should not work during the COVID-19 pandemic without adequate respiratory protection. “The physical barrier provided by a cloth mask may afford some protection, but likely much less than a surgical mask or a respirator.”
- **A 2013 study from the U.K. compared homemade masks to commercial surgical masks** (Davies et al. 2013). Twenty-one healthy volunteers made their own masks out of a variety of household materials including cotton t-shirts, pillowcases, and vacuum cleaner bags. The volunteers completed a fit test using a commercial fit test system and coughed into a sampling chamber called a “cough box” to measure how many microorganisms got through the mask. The researchers also tested the filtration ability of each mask using an aerosol containing two types of bacteria, one smaller and one larger than an influenza virus particle. [FYI: Influenza viruses range from 60 to 100 nm and SARS-CoV-2 viruses ranges from 70 to 90 nm (Kim et al. 2020).] **They found that all of the homemade masks blocked some microbes, but none of the materials worked as well as the surgical mask**, which filtered out three times as many particles in the filtration test and blocked twice as many respiratory droplets in the cough box test. The

pillowcase and the 100% cotton t-shirt were found to be the best household materials for a homemade mask.

- **The limited research on cloth face coverings does not show them to be very effective. However, new research in light of COVID-19 suggests they can be constructed to perform better.**
    - Dr. Scott Segal, chairman of anesthesiology at Wake Forest Baptist Health in the state of North Carolina, has been comparing different materials and designs for homemade masks. His findings are not yet published, but he's shared details of his work in interviews (NBC News, the New York Times). He says you should hold the fabric up to a bright light and if a lot of light passes through, it's not a good fabric for a mask. It's a challenge to find a material that both filters well and is breathable enough to actually wear. He found that **the best masks were constructed of two layers of high-quality, heavyweight "quilter's cotton," two-layers of thick batik fabric, or an inner layer of flannel and an outer layer of cotton.** These were as good as surgical masks (which filter 60% to 80% of small particles) or slightly better. For comparison, the best masks are N95 respirators, which filter at least 95% of particles as small as 0.3 microns.
    - Dr. Yang Wang, an assistant professor at Missouri University of Science and Technology, has also been researching homemade masks. In an interview he shared that an allergy-reduction HVAC filter sandwiched between two layers of cotton fabric blocked 89% of particles with one layer of filter material and 94% with two layers of filter material.
- **The CDC has posted sew and no-sew mask patterns here.** They say homemade masks should be washed regularly and can be used on children as young as two. Johns Hopkins Medicine also posted a pattern here.
- With PPE in short supply**, some hospitals and clinical settings are running out of masks. The situation is so severe in some areas that hospitals are even asking the public to help create masks for clinical use.** For example, University Hospitals in the state of Ohio is "looking for talented individuals who can sew homemade masks for our caregivers." For now, they are planning to make the homemade masks available to patients and visitors (helping to conserve the standard masks for care providers). If you would like to get involved with making masks to donate, the WeNeedMasks.org website has a list of locations needing masks.

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