



## Reference of the Week

- Corbett KS. Kakani P. Allocation of COVID-19 Relief Funding to Disproportionately Black Counties. JAMA. 08/07/2020  
<https://jamanetwork.com/journals/jama/fullarticle/2769419> pdf  
**Premise:** 1. CARES funding was distributed according past revenue and not according to need. 2. Distributing relief funds using a past revenue formula that preceded the pandemic might disproportionately direct funds away from “hotspots”. 3. Additionally, hospital revenue is driven by payor mix relatively reducing funding to institutions with low income clients (persons of color) who bear the greater COVID-19 burden. 4. This study examined relief funding to disproportionately Black communities.  
**Findings:** 1. Relief funding reflected past hospital revenues (as predicted) more than COVID-19 burden, co-morbidities, or hospital financial health. 2. Disproportionately Black counties receiving the same funding as other counties had a higher COVID-19 burden. 3. Disproportionately Black counties had more COVID-19 cases, COVID and non-COVID deaths, hospitals with lower operating margins, and less cash on hand. 4. The authors conclude, “Policymakers should consider aligning funding with measures of need rather than revenue, which would increase both equity and economic efficiency.”

## Other References:

- Lee S. Clinical Course and Molecular Viral Shedding Among Asymptomatic and Symptomatic Patients with SARS-CoV-2 Infection in a Community Treatment Center in the Republic of Korea. JAMA. 08.06.2020.  
<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2769235> pdf  
**Premise:** 1. The relationship of viral load to symptom level in COVID-19 is unknown. 2. It is also unknown whether asymptomatic patients are more or less infectious than those with symptoms with regard to viral load. 3. Retrospective cohort study comparing viral load (as defined by PCR cycle time) of symptomatic and asymptomatic patients assessed in community treatment centers in Korea. 4. Clinical course of both groups were defined as well.  
**Findings:** 1. Three groups emerged, asymptomatic (n=89), pre-symptomatic (n=21), and symptomatic (n=193): age IQR 22, 28, and 24 yrs respectively; comorbidities in the three groups were minimal (3.9%). 2. Conversion to pre-symptomatic category: 21 subjects (19.1%). 3. CT values of asymptomatic and symptomatic patients were similar suggesting similar viral loads. 4. Symptom-based surveillance and screening likely underreports infected patients and potential for transmission.
- Baker MG. Successful Elimination of Covid-19 Transmission in New Zealand. NEJM. 08/07/2020. (Comment)  
<https://www.nejm.org/doi/full/10.1056/NEJMc2025203> pdf  
**Measures required:** 1. Border control measures, community transmission control measures, case-based control measures, and health, well-being, and economic support. 2. Lessons learned: science-based risk assessment linked to early, decisive government action was critical; addressing all control measures early and effectively; empathetic and well-communicated messages to the public: combating the pandemic as the work of a unified “team of 5 million” by the prime minister. 3. It was recognized from the onset that the pandemic would disproportionately burden indigenous Maori and Pacific peoples. *The interventions here might be considered “draconian” but nothing short of the measures taken would likely have been successful. New Zealand provides a contextually modifiable template for addressing a pandemic in other countries.*
- Park YJ. Contact Tracing during Coronavirus Disease Outbreak, South Korea, 2020. Emerging Infectious Diseases (CDC). 10/2020, early release. [https://wwwnc.cdc.gov/eid/article/26/10/20-1315\\_article](https://wwwnc.cdc.gov/eid/article/26/10/20-1315_article) pdf  
**Methods:** 1. This is a retrospective review of South Korea’s “rigorous” contact tracing program. 2. Tools utilized in contact tracing included: “shoe-leather” epidemiology work; credit card transactions; global positioning system; and closed circuit television. 3. Index cases were grouped by age and a comparison was made between household and non-household contacts across the age groups.  
**Findings:** 1. 5,706 confirmed COVID-19 index cases resulted in monitoring 59,073 contacts. 2. 11.8% of household contacts of an index patient and 1.9% of non-household contacts had COVID-19. 3. Household transmission rate in the 10-19 years age group



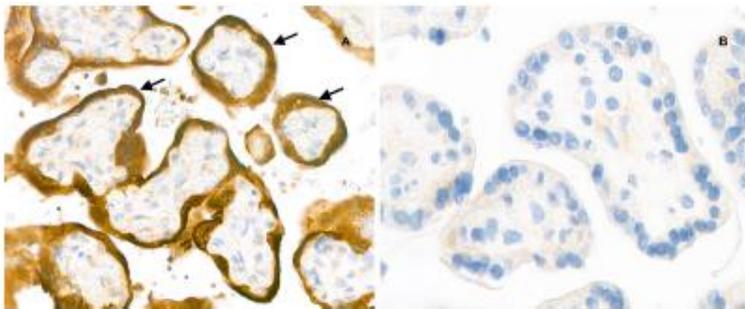
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was 18.6% whereas it was 5.3% for the 0-9 years age group. *Regarding COVID-19, it appears that young children have less susceptibility, less severity when infected, and transmit less than older children despite having comparable NP viral loads as adults.*

- Vivanti AJ. Transplacental transmission of SARS-CoV-2 infection. Nature Communications. 07/2020. <https://www.nature.com/articles/s41467-020-17436-6> pdf

**Case Report:** This is the first case report of likely transplacental acquisition of SARS-CoV-2 by a premature neonate.

**Evidence:** **1.** Infected mother with positive blood, NP swab, vaginal swab, and amniotic fluid. **2.** Placental infection with a very high viral load. **3.** Infant blood, NP swab, rectal swab, and bronchoalveolar lavage were PCR positive. **3.** Temporal relationship of neonatal positive studies consistent with transplacental infection. **4.** Clinically, the neonate had early respiratory distress and subsequently self-resolving neurologic changes.



**Fig. 1** Placental immunostaining for Sars-CoV-2 N-protein (800X).

**a.** The intense brown cytoplasmic positivity of placental cells in the patient.

**b.** Negative control placenta (the case report featured a second negative placental control).

5. It appears that vertical infection can take place but it is uncommon.

- Scozzi D. Circulating Mitochondrial DNA is an Early Indicator of Severe Illness and Mortality from COVID-19. Biology. 7/30/2020 (pre-print).

**Premise:** **1.** Mitochondrial DNA (MT-DNA) is a member of damage associated molecular patterns (DAMPS) released by injured or dying cells. **2.** MT-DNA has been shown to be elevated in a variety of pathologic states including ARDS and traumatic injury. **3.** MT-DNA is determined by a relatively inexpensive PCR test with a 60 minute turn-around time making it potentially a clinically acceptable biomarker of disease activity/severity. **4.** The primary outcome of this study was to determine the usefulness of MT-DNA as a predictor of COVID-19 severity reflected in the requirement for intubation, ICU care, and death.

**Findings:** **1.** 97 COVID-19 adults were enrolled (there was no control group): median age 65 yrs, 55.6% male, 77.3% African-American, 46.3% smokers, and many with co-morbidities. **2.** Mortality was observed in 25.8%; 56.7% required ICU admission; and 25.8% required invasive mechanical ventilation. **3.** MT-DNA as a predictor of severity events was compared with other recognized lab studies (ferritin, CRP, LDH, and D-dimer levels). **4.** MT-DNA is an independent predictor of severity events with similar or improved accuracy over other commonly used indicators.

*This is a preliminary pre-publication study that requires further review and replication but promises greater accuracy in determining the trajectory of COVID-19 disease upon admission.*

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