COVID-19 LITERATURE BRIEFING
September 2nd, 2020

Children's MINNESOTA

Reference of the Week

- Wyllie AL. Saliva or nasopharyngeal swab specimens for detection of SARS-CoV-2. NEJM. 08.24.2020 (correspondence). https://www.nejm.org/doi/pdf/10.1056/NEJMc2016359?articleTools=true pdf
  Premise/Methods: 1. There are potential advantages to developing a SARS-CoV-2 PCR saliva test: no swabs; less discomfort; less sampling error; less interface with healthcare system; potential home test. **2.** There is no data comparing the sensitivity of a saliva test to the nasopharyngeal swab test. **3.** This study tested saliva specimens collected by inpatients themselves and nasopharyngeal swabs (NP) collected from the patients at the same time point by health care workers. **4.** SARS-CoV-2 RNA copies in the two collection methods were compared as were the positive PCR rates of sampling over time. **5.** The two sampling methods also compared specimens obtained from asymptomatic healthcare workers (HCW).
  Results: 1. More SARS-CoV-2 RNA copies were detected in the saliva specimens than in the NP specimens in 70 matched samples. **2.** More saliva specimens were positive at 1 to 5 days and 10 days after diagnosis. **3.** Less variation in levels of SARS-CoV-2 RNA in the saliva specimens was observed over time. **4.** 450 asymptomatic HCW provided saliva and NP samples for PCR: 13 persons tested positive by both sampling methods though 6 NP samples were initially negative. *Self-collection of saliva samples for SARS-CoV-2 PCR has significant potential advantages in accuracy, efficiency, and total cost and opens the door to home testing in the future.*

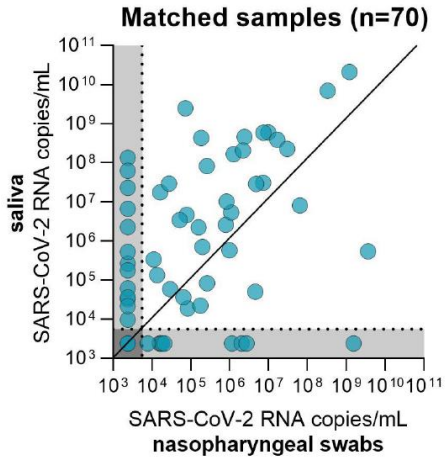

Fig. S1. SARS-CoV-2 RNA titers are higher in saliva than nasopharyngeal swabs from COVID-19 positive hospital inpatients.

SARS-CoV-2 RNA titers of the first available patient-matched nasopharyngeal and saliva samples (n = 70), with higher virus RNA concentrations generally detected in matched saliva samples as compared to nasopharyngeal swabs (Wilcoxon signed-rank test ($p < 0.001$).

Other References:

- Sola AM. Prevalence of SARS-CoV-2 Infection in Children Without Symptoms of Coronavirus Disease 2019. JAMA-pediatrics. 08.25.2020. https://jamanetwork.com/journals/jamapediatrics/fullarticle/2769878 pdf
  Premise/Methods: 1. The prevalence of asymptomatic childhood SARS-CoV-2 is important to guide infections control policy, school re-opening, and extent of community disease. **2.** Re-starting elective surgery at children's hospitals included screening asymptomatic children for COVID-19 before surgery. **3.** The prevalence of SARS-CoV-2 defined by PCR was calculated for 28 children's hospitals and compared with that of the general population.
  Findings: 1. The combined population of 33,041 asymptomatic children (0-18 yrs) tested at 28 hospitals revealed 250 positive children and prevalence varied from 0% - 2.2%. **2.** The pooled prevalence was 0.65% but individual facility prevalence varied with the incidence of COVID-19 in the local community. **3.** The prevalence of asymptomatic children in a particular service area can be estimated from the incidence of COVID-19 in the general population. *Although limitations of this study exist the core finding that asymptomatic carriage in children parallels disease in the general population can be used in local decision-making regarding testing requirements for children and school re-opening.*

- Chastain DB. Racial Disproportionality in Covid Clinical Trials. NEJM. 08.27.2020. https://www.nejm.org/doi/full/10.1056/NEJMp2021971?query=TOC pdf
  Perspective: 1. Black, Latinex, and Native Americans disproportionately shoulder the burden of COVID-19, particularly severe

and lethal disease, but are underrepresented in COVID-19 clinical trials. **2.** Federal law and NIH policy mandate inclusion of minorities in federally funded research. **3.** The limited benefit of remdesivir has not been shown to clearly benefit minorities due to their underrepresentation in clinical trials. **4.** Lack of participation by minorities in clinical trials is multifactorial: distrust of the medical establishment; hidden study costs; poor health literacy; language barriers; lack of accessibility and information; and implicit bias against minorities. **5.** All members of the research apparatus including sponsors, regulatory agencies, funding agencies, medical journals, peer reviewers, and the researchers themselves must endeavor to enroll minority groups not only for reasons of justice but for sound science as well. *Clearly, the window to our unjust society has been widely opened and disparity appears to extend into almost every corner of healthcare.*

- Erdede O. An overview of smell and taste problems in paediatric COVID-19 patients**.** Acta Paediatrica. 08.04.2020. https://www.nejm.org/doi/full/10.1056/NEJMp2021971?query=TOC pdf
  Premise/Methods: 1. Respiratory disease predominated early reports of COVID-19. Subsequently, less common and unusual symptom/signs have been observed including changes in smell and taste. **2.** Anosmia/hyposmia refer to total and partial loss of smell whereas ageusia/dysgeusia refer to total and partial loss of taste. **3.** This review scans the medical literature for cases of smell and taste dysfunction in children.
  Results: 1. 18 childhood cases of either taste and/or smell disorder were found in the world literature. **2.** Because taste and smell are subjective complaints, the true incidence of these symptoms is unclear. **3.** There appears to be some correlation of these disorders with disease severity in adult with more severe COVID-19 being associated with less taste/smell complaints. **4.** Taste and smell dysfunction tends to return to normal with a few weeks but this not always the case. *The incidence of ageusia/dysgeusia and anosmia/hyposmia in the COVID-19 adult population can be as high as 30% of patients. It may be no less in children though this is pure speculation.*

- Luo Z. Assessment of Pediatric Outpatient Visits for Notifiable Infectious Diseases in a University Hospital in Beijing During COVID-19. 08.24.2020. https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2769684 pdf
  Premise/Methods: 1. The effect of SARS-CoV-2 on the prevalence of other infectious diseases in a community is unknown. **2.** This single site retrospective study from a Chinese university hospital reviewed outpatient visits for notifiable infectious diseases during the pandemic. **3.** The primary outcomes were the number of pediatric outpatient visits, number of pediatric patients with notifiable infectious diseases, and proportion of pediatric patients with notifiable infectious diseases in pediatric outpatient visits compared to a pre-pandemic period.
  Findings: 1. 2,420 pediatric outpatient visits occurred during the pandemic compared to 14,557 during a similar period in 2019. **2.** 34 patients with notifiable infectious diseases were reported during the outbreak, an average of 0.4 per day, compared with 383 and 4.3, respectively, in 2019. **3.** A dramatic decline in influenza was observed: 27 cases during the pandemic versus 358 in 2019. **4.** The reduction in notifiable diseases may have been due to a decline in transmission from mitigating measures to reduce the spread of Sars-CoV-2 or parental fear of contracting COVID-19 by visiting the clinic. *Depending on the compliance of masking, social distancing, and selective lockdown, the transmission of influenza this coming season may be significantly reduced.*

- Swann OV. Clinical characteristics of children/young people admitted to hospital with covid-19 in United Kingdom: prospective multicenter observational cohort study. BMJ. 08.27.2020. https://www.bmj.com/content/370/bmj.m3249 pdf.
  Premise/Methods: 1. A refined description of COVID-19 and multisystem inflammatory syndrome in children (MIS-C) and risk factors for severity continue to evolve. **2.** The study took place in 260 hospitals in England, Wales and Scotland and included a minimum of 2 weeks follow-up.
  Findings: 1. Between 1.17.2020 and 7.03.2020, 69,516 hospitalized confirmed SARS-CoV-2 were admitted and 651 ≤ 19 yrs (0.9%): median age 4.6 yrs; 35% < 12 mo; 56% male; at least 1 co-morbidity 42%; 18% required PICU; 1% case fatality rate. **2.** Ethnicity: 57% white, 12% South Asian; 10% black (4.7% of the general population). **3.** 11% MIS-C (n=52): more likely to present with fatigue, headache, myalgia, sore throat, and lymphadenopathy, as well as a lower platelet count than children with SARS-CoV-2 alone; 51% inotropic support; black ethnicity 17.3%; PICU 73.1%; invasive ventilation 26.9%; deaths 0.

SEE THE ARTICLE CABINET ON THE S: DRIVE, “COVID-19 ARTICLE RESOURCE CABINET” FOR CHILDREN’S FULL COLLECTION