

Articles about COVID-19 April 27 – May 1

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Name of Article and Link	Journal, Date	Category of Study	Question it asks	Results in Brief	Clinical Implications, Limitations	Initials
<a href="#">Mental Health Status Among Children in Home Confinement During the Coronavirus Disease 2019 Outbreak in Hubei Province, China</a>	JAMA, April 24, 2020	Clinical	Did students experience depression and anxiety symptoms during home confinement?	Using a survey, the researchers gathered demographic information and utilized the Children’s Depression Inventory-Short Form (CDI-S) and the Screen for Child Anxiety Related Emotional Disorders to compare students in Wuhan and those in Huangshi (both cities within the Hubei Province). Out of the 2330 students that participated 22.6% reported having depressive symptoms, which is higher than other investigations in primary schools of China (17.2%). 18.9% of students reported anxiety symptoms, also higher than the prevalence in other studies.	A limitation that the researchers mention is their inability to know whether these outcomes will remain after the COVID-19 outbreak, so they hope to follow up with these participants to see if there is an effect in their future mental health. It would also be helpful to know whether these children had depression and anxiety symptoms at baseline.  Implications: It is good to keep in mind that children are being effective by this pandemic and feeling symptoms of depression and anxiety, so we should not be afraid to ask. This is useful to know as we talk to children at home or in virtual classroom settings, so that we can address their symptoms and help them find coping strategies. Additionally, it is	MCG

					good to keep in mind so we can follow up with children after they are back in school/activities to see if these symptoms remain.	
<a href="#">Rapid point-of-care testing for SARS-CoV-2 in a community screening setting shows low sensitivity</a>	Public Health, April 18, 2020	Public Health	How does the rapid test compare to the gold standard qPCR test?	At one testing center in Germany, 49 individuals were selected (39 new individuals and 10 who were previously diagnosed with SARS-CoV-2). The rapid test utilizes IgG/IgM detection with two detection bands and requires only 2 drops of blood from a finger stick and requires a total of 20 min. It was found that 22 people tested positive with repeated qPCR and the rapid test only found 8 correctly positive (sensitivity 36.4%) and then of the 27 that tested negative with qPCR there were 24 that were correctly negative (specificity of 88.9%). Authors conclude that this rapid test should not be used to make decisions on public health measures.	Implications: It would be useful to have a faster test that relies on a small amount of blood.  Limitations: This is a pretty small sample size, however the sensitivity of the rapid test is quite low, therefore it would not be beneficial to use this test even with the small sample size.	MCG
<a href="#">COVID-19 infection and glucocorticoids: update from the</a>	Journal of Endocrin	Opinion article from the Italian	How to tailor corticosteroid replacement in AI	COPD, Asthma, and other diseases requiring treatment with glucocorticoids (GC) do not appear to be as	Limitations: This article lacks data and did not do a good job of critically appraising some of the data it looked at	LW

<p><a href="#">Italian Society of Endocrinology Expert Opinion on steroid replacement in adrenal insufficiency</a></p>	<p>ological Investigation 25 April 2020</p>	<p>Society of Endocrinology</p>	<p>patients with COVID19.</p>	<p>significant as other risk factors for severe COVID19. One study found decreased mortality in 62 patients receiving methylprednisolone for COVID19 ARDS.</p> <p>During mild illness AI patients lack the increase in GC, placing them at higher risk of progressing to severe disease.</p> <p>“In moderate stress, 100 mg followed by 60 mg/24 h of HC infusion generally maintains cortisol levels above normal the range in most of AI patients [24].” Thus in mild COVID19 it is reasonable to treat AI patients with “low to intermediate additional doses (i.e., doubling the usual dose or adding oral 20–40 mg HC).”</p> <p>“If increasing vomiting and/or diarrhea, parenteral injection is mandatory. If fever increases or persists, symptoms worsen (including AI-specific symptoms), or</p>	<p>for example it quoted a “study of 200 patients” when really 62 of these patients received steroids.</p> <p>There should be a low threshold to hospitalize AI patients with COVID19 due to risk of adrenal crisis.</p> <p>mild COVID-19 symptoms such as fatigue and GI symptoms overlap with AI symptoms.</p> <p>There is no indication to increase GC therapy in asymptomatic patients with AI.</p> <p>It is important to keep in mind that GCs may have psychological side effects and many are struggling psychologically due to the various sociological stresses of the pandemic.</p> <p>There is very limited data on COVID19 in AI patients, more studies are needed to create a</p>
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<a href="#">Alterations in Smell or Taste in Mildly Symptomatic Outpatients With SARS-CoV-2 Infection</a>	<p>JAMA. April 22, 2020</p>	<p>Self-reported cross-sectional survey</p>	<p>What is the prevalence, intensity, and timing of an altered sense of smell or taste in patients with COVID19?</p>	<p>130 out of 202 (64.4%) of patients reported any change in smell or taste. Symptom severity was graded on a scale 0-5. Median severity score was 4 out of 5 and 23.8% reported a score of 5.</p>	<p>Limitations: subjective measurement by phone interview. This study only included those with mild disease able to be managed from home. Nasal congestion may be confounding although</p>	<p>LW</p>

				Altered sense of smell or taste occurred before other symptoms in 24 (11.9%); at same time as other symptoms in 46 (22.8%); and after other symptoms in 54 (26.7%)	not frequently reported in this population.  Alterations in smell or taste are some of the most common symptoms of mild COVID19 and may be the only presenting symptom. Patients with altered smell or taste may warrant testing or self-isolation to prevent spread of COVID19.	
<a href="#">Large-Vessel Stroke as a Presenting Feature of Covid-19 in the Young.</a>	<i>NEJM.</i> April 28, 2020	Clinical  Case report	Does covid-19 increase risk of large-vessel ischemic strokes in patients under the age of 50?	A case report of 5 patients under the age of 50 who presented with acute ischemic stroke due to large vessel occlusion. Age ranged 33-49 yo. NIHSS on admission ranged 13-23. Nonspecific Covid-19 symptoms included fever, cough, lethargy and headache in 3 patients. Two patients had no other symptoms prior to presenting with neurologic deficits.	Limitations: Small sample size. Three out of five patients have at least one of the traditional risk factors for stroke: hyperlipidemia, hypertension, diabetes, or prior stroke.	SN
<a href="#">Coronavirus disease 2019 in pregnancy</a>	<i>International Journal of Infection Disease</i>	Clinical  Retrospective case series	How do the clinical courses and outcomes compare between pregnant and reproductive age non-pregnant	From January 15 to March 15, patients hospitalized for COVID-19 at one of the designated hospitals for pregnant women in Wuhan. Pregnant women and	Implications: In this particular study there were no differences between the pregnant women and the non-pregnant women of reproductive age. There was	MCG

	<p>April 22, 2020 Pre-proof</p>		<p>women with COVID 19? And is there evidence of vertical transmission of COVID-19?</p>	<p>reproductive age non-pregnant women (age 18 – 41) were enrolled in the study if they had laboratory confirmed COVID-19, respiratory qPCR or serology IgM testing. 82 patients were enrolled (28 pregnant women and 54 reproductive age non-pregnant women).</p> <p>The study indicated no difference in disease severity, with the majority being moderate (fever, respiratory symptoms, chest imaging that suggests pneumonia). There was also no difference in hospital length of stay or the days to viral clearance. 22 of the pregnant women gave birth to 23 live infants (one set of twins!) while hospitalized with 5 of them being vaginal births. There were no recorded SARS-CoV-2 positive infants.</p>	<p>also no evidence to support vertical transmission of COVID-19 in late stage of pregnancy, even with vaginal births. This suggests that women who contract the virus in the third trimester are potentially at low risk of transmitting the virus to their fetus and that their clinical course will not be worse due to their immunosuppressed state.</p> <p>Limitations: This was a relatively small study, especially in regards to the number of vaginal births. There are also a few other studies mentioned in this article about other investigations of pregnancy and Covid and there are some conflicting results, therefore this requires further study. Additionally, we still do not know what might occur if a woman becomes infected at an earlier trimester as the women diagnosed in their first and second trimesters decided to abort their pregnancies due to the</p>	
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					uncertainty of the potential transmission.	
<a href="#"><u>Gilead Announces Results From Phase 3 Trial of Investigational Antiviral Remdesivir in Patients With Severe COVID-19</u></a>	This is a press release from Gilead, NOT a peer-reviewed journal 29 April 2020	two randomized, open-label, multi-center Phase 3 clinical trials for remdesivir	Is a 5-day course as effective as a 10-day course of remdesivir?	<p>Patients receiving a 5-day vs 10-day course of remdesivir and similar outcomes of clinical improvement.</p> <p>By hospital day 14, 64.5% in the 5-day group and 53.8% in the 10-day group were considered clinically recovered</p> <p>No new findings in terms of safety.</p> <p>patients who received remdesivir within 10 days of symptom onset had improved outcomes compared to those who received it later (62% of those treated early discharged by day 14 compared to 49% in those treated later)</p>	<p>Limitations: This is a press release from Gilead, NOT a peer-reviewed journal</p> <p>If a 5-day course is just as effective as 10-day, this will greatly increase the supply of remdesivir available.</p>	LW
<a href="#"><u>SARS-CoV-2 Infection in Children</u></a>				1391 children with known contacts having confirmed or suspected SARS-CoV-2 infection were evaluated; 171 (12.3%) of these	Cited "review of 72,314 cases by the Chinese Center for Disease Control and Prevention showed that less than 1% of the cases were in	LW

				<p>children were confirmed to have COVID19.</p> <p>“Fever was present in 41.5% of the children at any time during the illness. Other common symptoms were cough and pharyngeal erythema. A total of 27 patients (15.8%) did not have any symptoms or pneumonia radiologically. 12 patients had radiologic features of pneumonia but did not have any symptoms. 3 patients required ICU care and mechanical ventilation but all 3 had coexisting conditions (hydronephrosis, leukemia, and intussusception).”</p>	<p>children younger than 10 years of age.2"</p> <p>Compared to adults, children have much milder to no symptoms at all from COVID19</p>	
<p><a href="#">Presymptomatic SARS-CoV-2 Infections and Transmission in a Skilled Nursing Facility</a></p>	<p><i>NEJM</i>. April 28, 2020.</p>	<p>Public Health / Epidemiology</p>	<p>What is the transmission of SARS-CoV-2 in skilled nursing facilities? How effective is symptom-based screening to identify infections in residents of</p>	<p>89 residents in a skilled nursing facility in King County, WA were included in the study. Two serial-point prevalence surveys were conducted 1 week apart. The first survey included all consenting residents while the second survey only included</p>	<p>Implications:</p> <ul style="list-style-type: none"> <li>-Substantial virus shedding among asymptomatic and presymptomatic residents extending over 7 days before and after onset of symptoms.</li> <li>-High prevalence of Covid-19 (64%) despite implementation of infection-control measures within the facility. This fact</li> </ul>	



			<p>skilled nursing facilities?</p>	<p>residents who had a negative test result or positive test result with atypical symptoms or no symptoms. Each point-prevalence survey included a symptom assessment form and lab testing with rRT-PCR, viral culture, and genomic sequencing.</p> <p>57 of 89 residents tested positive for SARS-CoV-2. 48 of 76 residents who participated in point-prevalence surveys tested positive. Prevalence of Covid-19 among residents of the facility was 64%.</p> <p>For residents who were positive, 16 residents were symptomatic, 4 residents had atypical symptoms, 24 residents were presymptomatic, and 3 residents remained asymptomatic.</p> <p>Doubling time among residents was 3.4 days compared to 5.5 days in</p>	<p>emphasizes the challenge in limiting transmission within skilled nursing facilities in particular, and healthcare facilities in general.</p> <p>Limitations:</p> <ul style="list-style-type: none"> <li>-Inaccurate symptom data leading to misclassification of groups due to retrospective survey of symptoms 14 days prior to testing.</li> <li>-Study population limited to skilled nursing residents and thus not generalizable to the other populations</li> <li>-Staff members were not tested as part of the study. If symptomatic, staff members were advised to get tested by their healthcare providers. Asymptomatic staff members received no testing and could affect transmission if positive for Covid-19.</li> </ul>	
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				<p>King County during the same time period. The case-fatality rate was 26% despite implementation of early infection-control measures.</p> <p>Large quantities of viral RNA and viable virus were isolated from samples of asymptomatic and pre-symptomatic residents collected 6 days before to 9 days after onset of typical symptoms.</p>		
<p><a href="#">Aerodynamic analysis of SARS-CoV-2 in two Wuhan hospitals</a></p>	<p><i>Nature</i> 27 April 2020</p>	<p>Public health/epidemiology</p>	<p>What's the aerosol transmission of SARS-CoV-2 in hospitals and public areas? In concentration, deposition, size distribution</p>	<p>Concentration: SARS-CoV-2 RNA</p> <p>In patient areas with good ventilation in Renmin hospital, generally very low or non-detectable concentration; a 1-m<sup>2</sup> patient mobile toilet in Fangcang hospital had the highest concentration of 19 copies m<sup>3</sup>.</p> <p>In medical staff areas, they found higher Con. than patient areas, Renmin Hospital had low Con of 6 copies m<sup>3</sup>; the Protective</p>	<p>Limitations:</p> <ol style="list-style-type: none"> <li>1. small sample size</li> <li>2. using viral RNA instead of infectivity, need further study about airborne infectivity of SARS-CoV-2.</li> </ol> <p>Conclusion:</p> <p>Call the attention to the ventilation and sterilization of toilets that can be a potential spread source of the virus; Personal protection measures are needed for the general public to reduce the risk of airborne virus;</p>	

				<p>Parel Remove Rooms in Fangcang Hospital had upper range of Con of 16-42 copies m3 from first batch</p> <p>The second sample batch from medical staff areas in Fangcang Hospital after implementation of stricter sanitization, showed all non-detectable results.</p> <p>In public areas, the majority of the sites have undetectable or very low Con. (&lt; 3copies m3), except for one crowd gathering site and the other site next to Renmin Hospital</p> <p>Deposition Inside the Renmin Hospital ICU room, the two aerosol deposition samples tested positive with an estimated deposition rate of 31 and 113 copies m2/hr.</p> <p>Size distribution SARS-CoV-2 aerosol mainly resides in two size range, submicron region ( <math>0.25 &lt; D_p &lt; 1.0 \mu m</math> ), super-</p>	<p>Effective sanitization of the high-risk area in the hospital is vital to limit the transmission and protect the medical stuff, especially the surface sanitization of apparel before they are taken off to help reduce the potential risk to medical stuff.</p>	
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				micron region ( $D_p > 2.5 \mu m$ ). Submicron aerosol has relatively longer residence time.		
Impact of school closures for COVID-19 on the US health-care workforce and net mortality: a modelling study.	<i>Lancet Public Health</i> . 3 April 2020.	Public Health / Epidemiology	What is the impact of school closures on reducing the healthcare workforce, and how does it affect cumulative mortality?	<p>Data from monthly releases of US Current Population Survey was used to characterize family structure within the US healthcare workforce and identify childcare needs among this population.</p> <p>28.8% of healthcare workers need to provide childcare for children aged 3-12 years old.</p> <p>15% of healthcare workers have unmet childcare needs. Highest unmet childcare obligations are highest among NPs, PAs, and technicians.</p> <p>6.8% of healthcare workers live in a single parent household. The professions most represented in this group are home health care aids, medical assistants and vocational nurses.</p>	Implications: Weighing the trade-offs of school closures is a critical aspect of saving lives. The burden of unmet childcare could lead to a substantial reduction in the healthcare workforce, thus lead to an increase in cumulative mortality. School closures reduce transmission and therefore play a role in containment strategies. It remains unknown which of the two pathways would result in a greater reduction in cumulative mortality.	SN

<p>Remdesivir in adults with severe COVID-19: a randomised, double blind, placebo controlled, multicentre trial</p>	<p><i>Lancet</i> April, 2020.</p>	<p>Therapeutics</p>	<p>Does remdesivir have therapeutic efficacy in vivo for patients with SARS-CoV-2 and pneumonia?</p>	<p>Primary endpoint (time to clinical improvement) done by ITT. Median 21.0 days [IQR 13.0–28.0] in the remdesivir group vs 23.0 days placebo [15.0–28.0]; HR 1.23 [95% CI 0.87–1.75]</p> <p>Around 325 events needed for 80% power for type I error (false positive) chance of 2.5%. To achieve this, an n of about 453. For this experiment n=237. No patients were enrolled after 3/12 due to COVID19 rules becoming more stringent for admission to hospital and the monitoring board saying the study should be terminated by 3/29. This dropped the power from 80% to 58%.</p> <p>Mainly older (64-67 YO) asian population. Slightly more males than females. Nearly 40-50% had HTN and 20% had DM. Most characteristics are similar. Notable differences in National Early Warning Score 2 Level at day 1. Remdesivir score was</p>	<p>Main limitations a reduction in power mentioned above (80-&gt;58%). Corticosteroids were used by many patients which may have increased viral replication. Study population was mainly Asian. Remdesivir also had a higher National Early Warning Score 2 Level and more baseline population that had RR &gt; 24. One of the authors worked as a consultant (not paid) for Gilead Science on respiratory antiviral programs (a manufacturer of Remdesivir).</p>	<p>PT</p>
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				<p>average of 5 while placebo was average of 4. Scale is ranked 1-6 with 1 being healthy and 6 being dead. Another difference was RR &gt; 24 breaths/min. About 23% in remdesivir had high RR compared to 14% in placebo group.</p>		
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