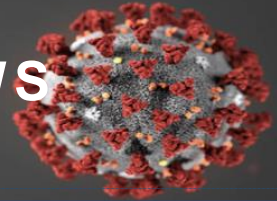


# WEEK IN REVIEW

## COVID-19 SCIENTIFIC NEWS

### APRIL 27 - May 1, 2020



**MS Covid-19 Literature Review Task Force: Mary Chandler Gwin,  
Feiyun Ma, Soukaina Noor, Peter Triggiani, and Laurel Wood**  
Faculty Advisor: Louise King, MD

The MS COVID-19 Literature Review Task Force is a group of UNC medical and pharmacy students who conduct daily literature searches for scientific updates on COVID-19. Contact Mary Chandler Gwin, [mary\\_gwin@med.unc.edu](mailto:mary_gwin@med.unc.edu) for any comments, questions, etc.

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## LATEST ARTICLES:

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### CLINICAL INFORMATION

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[Alterations in Smell or Taste in Mildly Symptomatic Outpatients With SARS-CoV-2 Infection](#). Spinato, G. et al., *JAMA*. April 22, 2020.

- 130 out of 202 (64.4%) of outpatients with COVID-19 reported any change in smell or taste. Alterations in smell or taste are some of the most common symptoms of mild COVID-19 and may be the only presenting symptom.

[Large-Vessel Stroke as a Presenting Feature of Covid-19 in the Young](#). Oxley, T. et al., *New England Journal of Medicine*. 28 April 2020.

- A case report of five patients (ages ranging between 33 and 49) who presented with acute ischemic stroke in New York City and who tested positive for SARS-CoV-2. Two patients had no risk factors, but three patients had at least one of the following: diabetes, hyperlipidemia, hypertension or a history of mild stroke. On presentation, two patients had no symptoms of Covid-19; the other three patients had lethargy, fever, cough, headache or chills. On admission, NIHSS ranged between 13 and 23, which is consistent with large vessel occlusion, but following stroke work-up there was no source of thrombus found. Further investigation is required to determine if SARS-CoV-2 was the primary risk factor for large vessel stroke.

[SARS-CoV-2 Infection in Children](#) Lu, X., et al. *NEJM*. April 32, 2020.

- Compared to adults, children have much milder to no symptoms at all from COVID-19. 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."

[Mental Health Status Among Children in Home Confinement During the Coronavirus Disease 2019 Outbreak in Hubei Province, China](#). Xie, Xinyan, et al. *Jama Pediatrics*. April 24, 2020.

- Using the Children's Depression Inventory-Short Form (CDI-S) and the Screen for Child Anxiety Related Emotional Disorders students in Wuhan and those in Huangshi (both cities within the Hubei Province) were surveyed for depression and anxiety symptoms. Out of the 2330 students that participated, 22.6% reported having depressive symptoms and 18.9% of students reported anxiety symptoms, both of which are higher than the prevalence in previous studies.

## PUBLIC HEALTH/EPIDEMIOLOGY

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[Rapid point-of-care testing for SARS-CoV-2 in a community screening setting shows low sensitivity.](#) Döhla, M. et al., *Public Health*. April 18, 2020.

- At one testing center in Germany, 49 individuals were selected (39 new individuals and 10 who were previously diagnosed with SARS-CoV-2) to compare a rapid diagnostic test (utilizing IgG/IgM detection bands that requires 2 drops of blood) to the gold standard qPCR. The rapid test reported 8 samples positive out of the 22 samples that were positive with the fold standard (sensitivity 36.4%). The rapid test reported 24 samples negative out of the 27 negative samples from the qPCR (specificity 88.9%). The authors concluded that this rapid test should not be used to make decisions on public health measures.

[Coronavirus disease 2019 in pregnancy.](#) Qiancheng, X. et al., *International Journal of Infectious Disease*. 22 April 2020.

- 82 patients from a designated hospital in Wuhan were enrolled in this retrospective study, 28 pregnant women and 54 non-pregnant reproductive age (18-41 years) women with laboratory confirmed COVID-19, respiratory sample PCR or serology IgM antibody test. There was no statistical significance between the groups in regards the clinical outcomes, hospital length of stay or the time to viral clearance. 22 pregnant women had 23 live births (1 set of twins) and none of the infants tested positive for SARS-CoV-2.

[Presymptomatic SARS-CoV-2 Infections and Transmission in a Skilled Nursing Facility.](#) Arons, M. et al. *New England Journal of Medicine*. 24 April 2020.

- 89 residents at a skilled nursing facility in King County, WA were followed after the first resident case was diagnosed in March 2020, with serial testing for COVID-19. Despite early implementation of infection control measures, this skilled nursing facility had a 64% prevalence of Covid-19 among residents and a case fatality rate of 26%. Asymptomatic patients comprised 54% of the COVID-19 positive cases; 89% of these asymptomatic cases did develop symptoms. Of note, health care workers at the facility were not tested in this study.

[Impact of school closure for Covid-19 on the US healthcare workforce and net mortality: a modelling study.](#) Bayham, J., Fenichel, E. *The Lancet Public Health*. 03 April 2020.

- This modelling study used publicly available data from the US Current Population Survey to evaluate two pathways by which school closures could affect Covid-19 mortality: 1) effect of school closures on reducing transmission and 2) effect of unmet burden of childcare on reducing the healthcare workforce. 15% of healthcare workers have unmet childcare needs with the most represented professions are nurse practitioners, physician's assistants, and diagnostic technicians. There are many major limitations in this study including the inability to account for childcare needs met by grandparents, relatives, and neighbors as well as institutional services or community-based volunteering programs.

## THERAPEUTIC DEVELOPMENTS

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[COVID-19 infection and glucocorticoids: update from the Italian Society of Endocrinology Expert Opinion on steroid replacement in adrenal insufficiency.](#) Isidori, A. M. et al., *Journal of Endocrinological Investigation*. April 25, 2020.

- A review of treating patients with Adrenal Insufficiency who have Covid-19. The authors break down the steroid replacement by severity of illness. They comment that a lower threshold for hospitalization should be used for adrenally insufficient patients.

[Remdesivir in adults with severe COVID-19: a randomised, double-blind, placebo-controlled, multicentre trial.](#) Wang Y, Zhang D, Du G, et al., *The Lancet*. 2020. Doi: [https://doi.org/10.1016/S0140-6736\(20\)31022-9](https://doi.org/10.1016/S0140-6736(20)31022-9)

- This study looked at the therapeutic efficacy of remdesivir in 64-67-year-old patients with confirmed pneumonia and SARS-CoV-2. The original study was powered to enroll 453 patients; new regulations regarding coronavirus in hospitals caused the monitoring board to end the trial with only 257 patients enrolled. The primary endpoint was time to clinical improvement, comparing remdesivir to placebo (intention to treat). Median was 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]. Thus, this study found that remdesivir was not statistically significant in the primary endpoint. A large limitation of this study was the low enrollment, which changed the power from a desired 80% to a mere 58%.

- In a related story, NIH released a [preliminary report](#) from another remdesivir trial, the Adaptive COVID-19 Treatment Trial, which showed a 31% decrease in days to recover in patients treated with IV remdesivir. They also found a mortality benefit, with 8% mortality in the remdesivir group, compared to an 11.6% in the control group. The full study has not been made yet available to fully assess its validity.

[Gilead Announces Results From Phase 3 Trial of Investigational Antiviral Remdesivir in Patients With Severe COVID-19](#). Gilead Press Release. April 29, 2020.

- This report from Gilead suggests that a 5 day course of remdesivir has equivalent outcomes to a 10 day course

## BASIC SCIENCE

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[Aerodynamic analysis of SARS-CoV-2 in two Wuhan hospitals](#) Yuan Liu, Zhi Ning et al. Nature 27 April 2020

- The study collected viral samples in aerosols from patient areas, medical staff offices and public areas and investigated the aerodynamic nature of SARS-CoV-2 including concentration, deposition and size distribution by measuring viral RNA in aerosols in local hospitals in Wuhan in February and March 2020. The results showed that the concentrations of SARS-CoV-2 RNA in aerosols in well-ventilated patient rooms and the open public areas were very low or undetectable, while the concentrations were elevated in patients' toilets and crowding public areas. The study proposed a SARS-CoV-2 aerosol transmission pathway which is mediated by the surface deposition and resuspension from medical staff protective apparel and surface floor.

## OTHER SOURCES:

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### FROM CDC

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April 25: [Information on Investigational Therapeutics](#)

- No drugs or other therapeutics approved by the FDA
- Refer to the NIH guidelines for COVID-19 treatment (linked below)

April 27: [Updated priorities for testing patients with suspected COVID-19](#)

- Priority testing now given to patients who present with abdominal symptoms (diarrhea, vomiting, loss of taste or smell)

April 30: [Updated guidelines on contact tracing](#)

- Includes resources and tools to improve and enhance the contact tracing capabilities of communities

### FROM NIH

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- [Guidelines for COVID-19 treatment](#)

### FROM WHO

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April 27: [Situation Report 98](#)

- The WHO Regional Office for the Americas released a document outlining guidance for operation of immunization programs. The recommendations are as follow:
  - Routine vaccinations: The decision to offer routine vaccinations should be based on the capacity of the health systems within the community.

April 28: [Situation Report 99](#)

- '[R&D Blueprint: COVID-19 Experimental Treatments](#)' was published containing drug and non-drug experimental treatments for COVID-19

April 29: [Situation Report 100](#)

- Globally the number of cases has exceeded 3 million
- Guidance for local leaders in cities and urban settings to improve prevention, preparedness, and readiness for COVID-19
- Discusses the importance of rehabilitation during the pandemic
- WHO information Network of Epidemics created analysis capability to identify misleading sources and posts and predict areas of concern and gaps of information

April 30: [Situation Report 101](#)

- [WHO SEARO](#) held a meeting on April 29 with vaccine manufacturers and national regulatory authorities to discuss COVID-19 vaccine manufacturing
- Working to allowing all Member States have timely and accurate testing capacity for COVID-19

## FROM JOHNS HOPKINS

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April 27: [COVID-19 threatens to Starve Africa](#)

- Lock downs prohibit farmers from selling their supply and workers are unable to work in the fields

April 28: [Communication from Toldbert Nyenswah](#) on how successful contact tracing can improve pandemic responses

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### CASES/DEATHS: WORLD/US/NC/ORANGE COUNTY AS OF 11:30AM 5/1/2020

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- World: 3,278,546/233,998
- US: 1,070,032/63,019
- North Carolina: 10,754/406
- Orange County, NC: 217/17