Providence

COVID-19 Resource Desk

#75 | 9.26.21 to 10.2.21

Prepared by System Library Services Retraction Watch

New Research

*note, **PREPRINTS** have not undergone formal peer review

COVID-19 related publications by Providence caregivers – see Digital Commons

Basic Science / Virology / Pre-clinical

1. **In vivo structure and dynamics of the SARS-CoV-2 RNA genome.** Zhang Y, et al. *Nat Commun*. 2021 Sep 28;12(1):5695. doi: 10.1038/s41467-021-25999-1.
https://www.nature.com/articles/s41467-021-25999-1
We developed a simplified SPLASH assay and comprehensively map the in vivo RNA-RNA interactome of SARS-CoV-2 genome across viral life cycle. We find that within virions, while SARS-CoV-2 genome RNA undergoes intensive compaction, genome domains remain stable but with strengthened demarcation of local domains and weakened global cyclization. Taken together, our analysis reveals the structural basis for the regulation of replication, discontinuous transcription and translational frameshifting, the alternative conformations and the maintenance of global genome organization during the whole life cycle of SARS-CoV-2, which we anticipate will help develop better antiviral strategies.

Clinical Syndrome

2. **COVID-19 related retinal micro-vasculopathy - a review of current evidence: COVID-19 related retinal micro-vasculopathy.** Teo KY, et al. *Am J Ophthalmol.* 2021 Sep 26:S0002-9394(21)00476-1. doi: 10.1016/j.ajo.2021.09.019.
https://www.sciencedirect.com/science/article/pii/S0002939421004761?via%3Dihub
31 studies reporting on 1373 subjects (972 COVID-19 and 401 controls) were included. Only case control studies were included in the pooled analysis. There was a significantly higher likelihood of retinal micro-vasculopathy in subjects with COVID-19 compared to controls. Our results suggested that COVID-19 related retinal micro-vasculopathy is a significant ocular manifestation of COVID-19 and may herald future retinal complications. These microvascular impairments might occurred antecedent to clinically visible changes and could be detected early by OCTA. These findings are significant due to the large numbers with COVID-19 and needs to be recognized by ophthalmologist as a potential long term sequelea of the disease.

3. **Prospective postmortem evaluation of 735 consecutive SARS-CoV-2-associated death cases.** Fitzek A et al. *Sci Rep*. 2021 Sep 29;11(1):19342. doi: 10.1038/s41598-021-98499-3. https://www.nature.com/articles/s41598-021-98499-3
To distinguish COVID-19 from non-COVID-19 deaths, we performed a systematic review of 735 SARS-CoV-2-associated deaths in Hamburg, Germany, from March to December 2020, using conventional autopsy, ultrasound-guided minimally invasive autopsy, postmortem computed tomography and medical records. 84.1% (n = 618) were classified as COVID-19 deaths, 6.4% (n = 47) as non-COVID-19 deaths, 9.5% (n = 70) remained unclear. Median age of COVID-19 deaths was 83.0 years, 54.4% were male. In the autopsy group (n = 283), the majority died of pneumonia and/or diffuse alveolar damage (73.6%; n = 187). Thromboses were found in 39.2% (n = 62/158 cases), pulmonary embolism in 22.1% (n = 56/253 cases). In 2020, annual mortality in Hamburg was about 5.5% higher than in the previous 20 years, of which 3.4% (n = 618) represented COVID-19 deaths. Our study highlights the need for mortality surveillance and postmortem examinations. The vast majority of individuals who died directly from SARS-CoV-2 infection were of advanced age and had multiple comorbidities.

Epidemiology & Public Health

4. **Update on SARS-CoV-2 seroprevalence - Regional and worldwide.** Rostami A, et al. *Clin Microbiol Infect.* 2021 Sep 25:S1198-743X(21)00539-5. doi: 10.1016/j.cmi.2021.09.019. https://www.clinicalmicrobiologyandinfection.com/article/S1198-743X(21)00539-5/fulltext
We identified 241 eligible studies involving 6.3 million individuals from 60 countries. The global pooled seroprevalence was 9.47%, although the heterogeneity among studies was significant. We estimated that ?738 million people had been infected with SARS-CoV-2 (as of December 2020). Highest and lowest seroprevalences were recorded in Central & Southern Asia (22.91%) and Eastern & South-eastern Asia (1.62%), respectively. Seroprevalence estimates were higher in males, persons aged 20-50 years, in minority ethnic groups living in countries or regions with low income and human development indices. The present study indicates that the majority of the world's human population was still highly susceptible to SARS-CoV-2 infection in mid 2021, emphasizing the need for vaccine deployment to vulnerable groups of people, particularly in developing countries, and for the implementation of enhanced preventive measures until 'herd immunity' to SARS-CoV-2 has developed.

5. **Pediatric COVID-19 Cases in Counties with and Without School Mask Requirements - United States, July 1-September 4, 2021.** Budzyn SE, et al. *MMWR Morb Mortal Wkly Rep.* 2021 Oct 1;70(39):1377-1378. doi: 10.15585/mmwr.mm7039e3. https://www.cdc.gov/mmwr/volumes/70/wr/mm7039e3.htm?s_cid=mm7039e3_w
Counties without school mask requirements experienced larger increases in pediatric COVID-19 case rates after the start of school compared with counties that had school mask requirements. The average change from week −1 (1–7 days before the start of school) to week 1 (7–13 days after the start of school) for counties with school mask requirements was 18.53 cases per 100,000 per day lower than the average change for counties without school mask requirements (34.85 per 100,000 per day). Comparisons between pediatric COVID-19 case rates during the weeks before (weeks −3, −2, and −1) and after (weeks 0, 1, and 2) the start of school indicate

that counties without school mask requirements experienced larger increases than those with school mask requirements.

6. **Predictors of incident SARS-CoV-2 infections in an international prospective cohort study.** Lin A et al. *BMJ Open.* 2021 Sep 21;11(9):e052025. doi: 10.1136/bmjopen-2021-052025. https://bmjopen.bmj.com/content/11/9/e052025.full
   Our study identified three modifiable health behaviours, namely the number of non-household contacts, attending large gatherings and restaurant visits, which may meaningfully influence individual-level risk of contracting SARS-CoV-2.

Healthcare Delivery & Healthcare Workers

7. **Moral Injury and Burnout in Health Care Professionals during the COVID-19 Pandemic.** Mantri S, et al. *J Nerv Ment Dis*. 2021 Oct 1;209(10):720-726. doi: 10.1097/NMD.0000000000001367. https://journals.lww.com/jonmd/Abstract/2021/10000/Moral_Injury_and_Burnout_in_Health_Care.5.aspx
   Odds of functional impairment were higher in respondents who were widowed, divorced, never married, or had direct experience caring for patients with COVID-19. COVID-19 has increased MI but not burnout in HPs; younger or unmarried individuals, nurses, and frontline workers may benefit from targeted outreach to reduce downstream effects of MI, depression, and/or posttraumatic stress disorder.

8. **Validation of a Crisis Standards of Care Model for Prioritization of Limited Resources During the Coronavirus Disease 2019 Crisis in an Urban, Safety-Net, Academic Medical Center**. Nadjarian A, et al. *Crit Care Med*. 2021 Oct 1;49(10):1739-1748. https://journals.lww.com/ccmjournal/Fulltext/2021/10000/Validation_of_a_Crisis_Standards_of_Care_Model_for.13.aspx
   Patients with major and severe chronic medical conditions overall had 46.55% and 50.00% mortality at 1 and 5 years, respectively. However, mortality varied between conditions. Our findings appear to support a crisis standards protocol which focuses on acute illness severity and only considers underlying conditions carrying a greater than 50% predicted likelihood of 1-year mortality. Modifications to the chronic lung disease, congestive heart failure, and cirrhosis criteria should be refined if they are to be included in future models.

9. **Prevalence and risk factors for SARS-CoV-2 infection and seroprevalence among clinical and non-clinical staff in a national healthcare system.** Alishaq M et al. *PLoS One.* 2021 Sep 30;16(9):e0257845. doi: 10.1371/journal.pone.0257845. eCollection 2021. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0257845
   HCWs are a diverse population with varying risk of infection. Clinical staff are at a lower risk likely due to increased awareness and infection prevention measures. Risk is higher for those in the lower socioeconomic strata. Infection is more likely to occur in non-healthcare setting than within the healthcare facilities.

10. **Anxiety and depression among healthcare workers during the COVID-19 pandemic: a systematic umbrella review of the global evidence.** Fernandez R, et al. *BMJ Open*. 2021 Sep 21;11(9):e054528. doi: 10.1136/bmjopen-2021-054528. https://bmjopen.bmj.com/content/11/9/e054528.long
    There is wide variation evident in the presence of anxiety and depression among HCWs. In particular, the prevalence of depression among physicians was high. Strategies to reduce the incidence of anxiety and depression are urgently required.

Prognosis

11. **Prognostic Value of Electrocardiographic QRS Diminution in Patients Hospitalized With COVID-19 or Influenza.** Lampert J, et al. *Am J Cardiol.* 2021 Aug 9:S0002-9149(21)00738-4. doi: 10.1016/j.amjcard.2021.07.048. https://www.ajconline.org/article/S0002-9149(21)00738-4/fulltext
    During the clinical care of hospitalized patients with COVID-19, diminished QRS amplitude on the surface electrocardiogram (ECG) was observed to precede clinical decompensation, culminating in death. LoQRS was independently associated with mortality in patients with COVID-19 when adjusted for baseline clinical variables. The median time to death in COVID-19 from the first ECG with LoQRS was 52 hours (interquartile range 18 to 130). Dynamic QRS amplitude diminution is a strong independent predictor of death over not only the course of COVID-19 infection, but also influenza infection.

Survivorship & Rehabilitation

12. **Persistent Health Problems beyond Pulmonary Recovery up to 6 Months after Hospitalization for SARS-CoV-2; A Longitudinal Study of Respiratory, Physical and Psychological Outcomes.** Hellemons ME, et al. *Ann Am Thorac Soc.* 2021 Sep 28. doi: 10.1513/AnnalsATS.202103-340OC. https://www.atsjournals.org/doi/10.1513/AnnalsATS.202103-340OC
    During the first 6 months after hospitalization for SARS-CoV-2 most patients demonstrated continuing recovery across all health domains, but persistent sequelae were frequent. Fatigue was the most frequent residual and persisting symptom up to 6 months after hospitalization, importantly impacting HR-QoL.

13. **Symptoms and Health Outcomes among Survivors of COVID-19 Infection 1 Year after Discharge from Hospitals in Wuhan, China.** Zhang X, et al. *JAMA Netw Open*. 2021 Sep 1;4(9):e2127403. https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2784558
    Of 2433 patients at 1-year follow-up, 680 (27.9%) were categorized into the severe disease group. Older age and severe disease were associated with higher risks of having at least 3 symptoms. The median CAT score was 2 (0-4), and a total of 161 patients (6.6%) had a CAT score of at least 10. Severe disease and coexisting cerebrovascular diseases were independent risk factors for CAT scores of at least 10. This study found that patients with COVID-19 with severe disease during hospitalization had more postinfection symptoms and higher CAT scores.

14. **Physical, cognitive and mental health outcomes in 1-year survivors of COVID-19-associated ARDS.** Latronico N et al. *Thorax*. 2021 Sep 29:thoraxjnl-2021-218064. doi: 10.1136/thoraxjnl-2021-218064. https://thorax.bmj.com/content/early/2021/09/29/thoraxjnl-2021-218064
We report on the outcome of 114 COVID-19-associated acute respiratory distress syndrome (ARDS) survivors evaluated at 3, 6 and 12 months after intensive care unit discharge with assessment of physical, mental and cognitive impairments. Critical illness polyneuromyopathy was diagnosed in 23 patients (39%). Handgrip dynamometry was 70% predicted at 3 months and significantly improved over time, whereas the 6 min walk test and severe fatigue did not. Independence in activities of daily living was achieved by 98% at 3 months. Cognitive impairment improved over time, whereas depression, anxiety and post-traumatic stress disorder symptoms, present in 9%, 10% and 4% at 3 months, did not. Normalised health-related quality of life was good. COVID-19-associated ARDS leads to persisting impairment in performance-based measures of physical function, while ADL, cognitive and mental health status, and health-related quality of life may be less impaired.

Therapeutics

15. **REGEN-COV Antibody Combination and Outcomes in Outpatients with Covid-19.** Weinreich DM, et al. *N Engl J Med*. 2021 Sep 29. doi: 10.1056/NEJMoa2108163. https://www.nejm.org/doi/10.1056/NEJMoa2108163?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed
REGEN-COV reduced the risk of Covid-19-related hospitalization or death from any cause, and it resolved symptoms and reduced the SARS-CoV-2 viral load more rapidly than placebo. The median time to resolution of symptoms was 4 days shorter with each REGEN-COV dose than with placebo (10 days vs. 14 days). Both REGEN-COV doses reduced viral load faster than placebo. Serious adverse events occurred more frequently in the placebo group (4.0%) than in the 1200-mg group (1.1%) and the 2400-mg group (1.3%); infusion-related reactions of grade 2 or higher occurred in less than 0.3% of the patients in all groups.

16. **STudy of Alteplase for Respiratory failure in SARS-Cov2 COVID-19 (STARS): A Vanguard Multicenter, Rapidly Adaptive, Pragmatic, Randomized, Controlled Trial.** Barrett CD et al. *Chest.* 2021 Sep 27:S0012-3692(21)04063-0. doi: 10.1016/j.chest.2021.09.024. https://www.sciencedirect.com/science/article/pii/S0012369221040630
The combination tPA-Bolus+heparin is safe in severe COVID-19 respiratory failure. A Phase 3 study is warranted given improvements in oxygenation and promising observations in VFD and mortality.

Transmission / Infection Control

17. **Aerosol SARS-CoV-2 in hospitals and long-term care homes during the COVID-19 pandemic.** Mallach G et al. *PLoS One.* 2021 Sep 30;16(9):e0258151. doi: 10.1371/journal.pone.0258151. eCollection 2021. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0258151
In total, 138 samples were collected from 99 rooms. RNA samples were positive in 9.1% (6/66) of samples obtained with the UPAS 2.5µm samplers, 13.5% (7/52) with the UPAS 10µm

samplers, and 10.0% (2/20) samples obtained with the Coriolis samplers. Culturable virus was not recovered in any samples. Viral RNA was detected in 15.1% of the rooms sampled. There was no significant difference in viral RNA recovery between the different room locations or samplers.

Vaccines / Immunology

18. **Safety Monitoring of an Additional Dose of COVID-19 Vaccine — United States, August 12–September 19, 2021.** Hause AM, et al. *MMWR Morb Mortal Wkly Rep*. ePub: 28 September 2021. DOI: http://dx.doi.org/10.15585/mmwr.mm7039e4
During August 12–September 19, 2021, among 12,591 v-safe registrants who completed a health check-in survey after all 3 doses of an mRNA COVID-19 vaccine, 79.4% and 74.1% reported local or systemic reactions, respectively, after the third dose; 77.6% and 76.5% reported local or systemic reactions after the second dose, respectively. Voluntary reports to v-safe found no unexpected patterns of adverse reactions after an additional dose of COVID-19 vaccine. CDC will continue to monitor vaccine safety, including for additional COVID-19 doses.

19. **Time since SARS-CoV-2 infection and humoral immune response following BNT162b2 mRNA vaccination.** Appelman B et al. *EBioMedicine.* 2021 Sep 24;72:103589. doi: 10.1016/j.ebiom.2021.103589. https://www.thelancet.com/journals/ebiom/article/PIIS2352-3964(21)00382-0/fulltext
Delaying the second vaccination in individuals infected up to ten months prior may constitute a more efficient use of limited vaccine supplies.

20. **Effectiveness of BNT162b2 Vaccine in Adolescents during Outbreak of SARS-CoV-2 Delta Variant Infection, Israel, 2021.** Glatman-Freedman A, et al. *Emerg Infect Dis.* 2021 Sep 27;27(11). doi: 10.3201/eid2711.211886. https://wwwnc.cdc.gov/eid/article/27/11/21-1886_article
In Israel, the BNT162b2 vaccine against severe acute respiratory syndrome coronavirus 2 was approved for use in adolescents in June 2021, shortly before an outbreak of B.1.617.2 (Delta) variant-dominant infection. We evaluated short-term vaccine effectiveness and found the vaccine to be highly effective among this population in this setting.

21. **Assessment of Allergic and Anaphylactic Reactions to mRNA COVID-19 Vaccines with Confirmatory Testing in a US Regional Health System**. Warren CM, et al. *JAMA Netw Open*. 2021 Sep 1;4(9):e2125524. doi: 10.1001/jamanetworkopen.2021.25524. https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2784268
Of 22 patients with clinical allergy history, 17 (77%) met Brighton anaphylaxis criteria. All reactions fully resolved. 10 of 11 (91%) had positive basophil activation test results to PEG and 11 of 11 (100%) had positive basophil activation test results to their administered mRNA vaccine. Based on this case series, women and those with a history of allergic reactions appear at have an elevated risk of mRNA vaccine allergy. Immunological testing suggests non-IgE-mediated immune responses to PEG may be responsible in most individuals.

22. **Phase 3 Safety and Efficacy of AZD1222 (ChAdOx1 nCoV-19) Covid-19 Vaccine.** AstraZeneca AZD1222 Clinical Study Group. *N Engl J Med.* 2021 Sep 29. doi: 10.1056/NEJMoa2105290. https://www.nejm.org/doi/10.1056/NEJMoa2105290?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed
A total of 32,451 participants underwent randomization, in a 2:1 ratio, to receive AZD1222 (21,635 participants) or placebo (10,816 participants). AZD1222 was safe, with low incidences of serious and medically attended adverse events and adverse events of special interest; the incidences were similar to those observed in the placebo group. Solicited local and systemic reactions were generally mild or moderate in both groups. Overall estimated vaccine efficacy was 74.0% and estimated vaccine efficacy was 83.5% in participants 65 years of age or older. High vaccine efficacy was consistent across a range of demographic subgroups. In the fully vaccinated analysis subgroup, no severe or critical symptomatic Covid-19 cases were observed among the 17,662 participants in the AZD1222 group; 8 cases were noted among the 8550 participants in the placebo group (<0.1%). The estimated vaccine efficacy for preventing SARS-CoV-2 infection was 64.3%.

23. **SARS-CoV-2 Vaccination and Immune Thrombocytopenia in de novo and pre-existing ITP patients.** Lee EJ, et al. *Blood.* 2021 Sep 29:blood.2021013411. doi: 10.1182/blood.2021013411. https://doi.org/10.1182/blood.2021013411
Seventy-seven de novo ITP cases were identified in VAERS, presenting with median platelet count of 3 x109/L approximately 1-week post-vaccination. Of 28 patients with available data, 26 responded to treatment with corticosteroids and/or intravenous immunoglobulin (IVIG), and/or platelet transfusions. Among 109 patients with pre-existing ITP who received a SARS-CoV-2 vaccine, 19 experienced an ITP exacerbation following the first dose and 14 of 70 after a second dose. Splenectomized persons and those who received 5 or more prior lines of therapy were at highest risk of ITP exacerbation. Fifteen patients received and responded to rescue treatment. Proactive monitoring of patients with known ITP, especially those post-splenectomy and with more refractory disease, is indicated.

24. **Humoral Immune Response in Hematooncological Patients and Health Care Workers Who Received SARS-CoV-2 Vaccinations.** Mair MJ et al. *JAMA Oncol.* 2021 Sep 30:1-8. doi: 10.1001/jamaoncol.2021.5437.
https://jamanetwork.com/journals/jamaoncology/fullarticle/2784649
In this cohort study of patients with hematooncological diseases and a control group of HCWs, anti-SARS-CoV-2 antibodies after vaccination could be detected in patients with cancer. Lower antibody levels compared with HCWs and differences in seroconversion in specific subgroups underscore the need for further studies on SARS-CoV-2 vaccination in patients with hematooncological disease.

25. **Real-world safety data for the Pfizer BNT162b2 SARS-CoV-2 vaccine, historical cohort study.** Shasha D, et al. *Clin Microbiol Infect.* 2021 Sep 27:S1198-743X(21)00538-3. doi: 10.1016/j.cmi.2021.09.018. https://www.clinicalmicrobiologyandinfection.com/article/S1198-743X(21)00538-3/fulltext

No association was found between vaccination, Bell's palsy, herpes-zoster or GBS. Symptoms of numbness or tingling were more common among vaccinees. This study adds reassuring data regarding the safety of the BNT162b2 vaccine.

26. **Correlates of protection against symptomatic and asymptomatic SARS-CoV-2 infection.** Feng S et al. *Nat Med.* 2021 Sep 29. doi: 10.1038/s41591-021-01540-1.
https://www.nature.com/articles/s41591-021-01540-1
Data from a randomized efficacy trial of the ChAdOx1 nCoV-19 (AZD1222) vaccine in the United Kingdom was analyzed to determine the antibody levels associated with protection against SARS-CoV-2. Binding and neutralizing antibodies at 28 days after the second dose were measured in infected and noninfected vaccine recipients. Higher levels of all immune markers were correlated with a reduced risk of symptomatic infection. A vaccine efficacy of 80% against symptomatic infection with majority Alpha (B.1.1.7) variant of SARS-CoV-2 was achieved with 264 (95% CI: 108, 806) binding antibody units (BAU)/ml: and 506 BAU/ml for anti-spike and anti-RBD antibodies, and 26 international unit (IU)/ml and 247 normalized neutralization titers (NF50) for pseudovirus and live-virus neutralization, respectively. Immune markers were not correlated with asymptomatic infections at the 5% significance level. These data can be used to bridge to new populations using validated assays and allow extrapolation of efficacy estimates to new COVID-19 vaccines.

Women & Children

27. **Monoclonal Antibodies Casirivimab and Imdevimab in Pregnancy for Coronavirus Disease 2019 (COVID-19).** Mayer C, et al. *Obstet Gynecol.* 2021 Sep 28. doi: 10.1097/AOG.0000000000004603.
https://journals.lww.com/greenjournal/Fulltext/9900/Monoclonal_Antibodies_Casirivimab_and_Imdevimab_in.296.aspx
Two unvaccinated pregnant individuals presented with moderate COVID-19, one in the second trimester and one in third trimester; both met criteria for outpatient management. To decrease the risk for severe disease, they were treated with casirivimab and imdevimab. Neither experienced an adverse drug reaction, and neither progressed to severe disease. Monoclonal antibodies such as casirivimab and imdevimab, approved under an emergency use authorization, should be considered in unvaccinated pregnant individuals with mild-to-moderate COVID-19 to decrease the risk of severe disease.

28. **An internally validated prediction model for critical COVID-19 infection and intensive care unit admission in symptomatic pregnant women.** Kalafat E, et al. *Am J Obstet Gynecol*. 2021 Sep 25:S0002-9378(21)01052-8. doi: 10.1016/j.ajog.2021.09.024.
https://www.ajog.org/article/S0002-9378(21)01052-8/pdf
At presentation with symptomatic COVID-19, pregnant and recently postpartum women can be stratified into high and low-risk for progression to critical disease, even where resources are limited. These models also highlight the independent risk for severe disease associated with obesity and should further emphasize that even in the absence of other co-morbidities, vaccination is particularly important for these women. Finally, the model also provides useful

information for policy makers when prioritizing national vaccination programmes to quickly protect those at highest risk of critical and fatal COVID-19.

29. **Association of the Delta (B.1.617.2) Variant of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) With Pregnancy Outcomes.** Wang AM, et al. *Obstet Gynecol*. 2021 Sep 30. doi: 10.1097/AOG.0000000000004595.
https://journals.lww.com/greenjournal/Fulltext/9900/Association_of_the_Delta__B_1_617_2__Variant_of.298.aspx
Pregnant patients with the Delta variant of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) are more symptomatic and were diagnosed earlier in pregnancy than patients diagnosed before the variant became prevalent.

30. **Maternal and Perinatal Outcomes Associated with the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Delta (B.1.617.2) Variant.** CWRH COVID-19 Working Group. *Obstet Gynecol.* 2021 Sep 30. doi: 10.1097/AOG.0000000000004607.
https://journals.lww.com/greenjournal/Fulltext/9900/Maternal_and_Perinatal_Outcomes_Associated_With.297.aspx
Our findings suggest increased critical illness and adverse perinatal outcomes associated with the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) Delta variant in pregnancy.

FDA / CDC / NIH / WHO Updates

NIH - COVID-19 Treatment Guidelines, update 9-29-21, The COVID-19 Treatment Guidelines Panel's Statement on the Emergency Use Authorization of Bamlanivimab Plus Etesevimab as Post-Exposure Prophylaxis for SARS-CoV-2 Infection

Commentary / Press Release

Merck and Ridgeback's Investigational Oral Antiviral Molnupiravir Reduced the Risk of Hospitalization or Death by Approximately 50 Percent Compared to Placebo for Patients with Mild or Moderate COVID-19 in Positive Interim Analysis of Phase 3 Study.

Getting Through COVID-19: Keeping Clinicians in the Workforce. *Ann Intern Med.* 2021 Sep 28. doi: 10.7326/M21-3381.

PFIZER AND BIONTECH SUBMIT INITIAL DATA TO U.S. FDA FROM PIVOTAL TRIAL OF COVID-19 VACCINE IN CHILDREN 5 TO <12 YEARS OF AGE, 9-28-21.

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