

COVID-19 Resource Desk

#67 | 8.1.21 to 8.7.21

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](#)

Retractions

1. **Ongoing Citations of a Retracted Study Involving Cardiovascular Disease, Drug Therapy, and Mortality in COVID-19.** Lee TC, et al. *JAMA Intern Med.* 2021 Aug 2. doi: 10.1001/jamainternmed.2021.4112.
https://jamanetwork.com/journals/jamainternalmedicine/articlepdf/2782460/jamainternal_lee_2021_id_210045_1626881919.30532.pdf

Although a prominent study about cardiovascular disease, drug therapy, and mortality in COVID-19 was retracted with wide publicity in June 2020, about a month after it was published, it continues to be widely cited, with 21 new citations in May 2021. We chose to study the article because it was retracted soon after publication, received prominent media attention, and was not subject to controversies, as has been the case for some studies of hydroxychloroquine and COVID-19, the topic of the other prominent article using the Surgisphere database that was also retracted around the same time. There is no reason for a retracted study to continue to be widely cited in the medical literature months after it was retracted, and, in some instances, for the retracted data to be incorporated into new analyses. Our findings challenge authors, peer reviewers, journal editors, and academic institutions to do a better job of addressing the broader issues of ongoing citations of retracted scientific studies and protecting the integrity of the medical literature.

Clinical Syndrome

2. **Characterisation of in-hospital complications associated with COVID-19 using the ISARIC WHO Clinical Characterisation Protocol UK: a prospective, multicentre cohort study.** ISARIC4C investigators. *Lancet.* 2021 Jul 17;398(10296):223-237. doi: 10.1016/S0140-6736(21)00799-6.
<https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/34274064/>
Complications and worse functional outcomes in patients admitted to hospital with COVID-19 are high, even in young, previously healthy individuals. Acute complications are associated with reduced ability to self-care at discharge, with neurological complications being associated with the worst functional outcomes. Males and those aged older than 60 years were most likely to have a complication. Renal, complex respiratory, and systemic complications were the most

frequent. Cardiovascular, neurological, and gastrointestinal or liver complications were also reported. COVID-19 complications are likely to cause a substantial strain on health and social care in the coming years.

Diagnostics & Screening

- 3. Performance characteristics of the Roche Diagnostics cobas® Liat® PCR System as a COVID-19 screening tool for hospital admissions in a regional healthcare delivery system.** Douglas Blackall, Raymond Moreno, Justin Jin, Rachel Plotinsky, Ronald Dworkin, Margret Oethinger. [Providence authors]. *J Clin Microbiol.* 2021 Jul 28;JCM0127821. doi: 10.1128/JCM.01278-21. https://journals.asm.org/doi/abs/10.1128/JCM.01278-21?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%20pubmed
Though the cobas® Liat® PCR System had a relatively high false-positive rate in our assessment, when used as a screening tool in a predominantly asymptomatic patient population, it has provided improved hospital operational efficiency across our regional healthcare system. We will continue our 2-stage testing approach, for cobas® Liat®-positive results, to gain additional knowledge and understanding of how best to use this molecular technology.

Epidemiology & Public Health

- 4. Suspected SARS-CoV-2 Reinfections: Incidence, Predictors, and Healthcare Use among Patients at 238 U.S. Healthcare Facilities, June 1, 2020- February 28, 2021.** Lawandi A, et al. *Clin Infect Dis.* 2021 Aug 5:ciab671. doi: 10.1093/cid/ciab671. <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciab671/6342166>
In a retrospective cohort study, among 131,773 patients with previous COVID19, reinfection with SARS-CoV-2 was suspected in 253(0.2%) patients at 238 U.S. healthcare facilities between June 1, 2020- February 28, 2021. Women displayed a higher cumulative reinfection risk. Healthcare burden and illness severity were similar between index and reinfection encounters.

Healthcare Delivery & Healthcare Workers

- 5. Variation of National and International Guidelines on Respiratory Protection for Health Care Professionals during the COVID-19 Pandemic.** Birgand G, et al. *JAMA Netw Open.* 2021 Aug 2;4(8):e2119257. doi: 10.1001/jamanetworkopen.2021.19257. <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2782670>
In this systematic review, we observed 4 strategies regarding the use of respirators: (1) systematic: recommended for care of COVID-19 patients, as in German guidelines; (2) flexible: recommended with use of MFs in the absence of available respirators, as in US and ECDC guidelines; (3) unit based, as in UK guidelines; and (4) recommended exclusively during AGPs, as in French and WHO guidelines. These discrepancies may reflect controversies related to SARS-CoV-2 transmission routes. The most recent assessment of the clinical evidence for the risk of transmission of acute respiratory infections to HCPs caring for patients undergoing AGPs dates back to a 2012 systematic review of a limited volume of studies. More evidence is still needed to clearly define what AGPs are and the level of risk associated with different procedures.

Prognosis

- 6. Risk of acute myocardial infarction and ischaemic stroke following COVID-19 in Sweden: a self-controlled case series and matched cohort study.** Katsoularis I, et al. *Lancet*. 2021 Jul 29:S0140-6736(21)00896-5. doi: 10.1016/S0140-6736(21)00896-5.
<http://www.thelancet.com/article/S0140673621008965/pdf>
348 481 matched control individuals were also included in the matched cohort study. The odds ratio for acute myocardial infarction was 6.61 and for ischaemic stroke was 6.74 in the 2 weeks following COVID-19. Our findings suggest that COVID-19 is a risk factor for acute myocardial infarction and ischaemic stroke. This indicates that acute myocardial infarction and ischaemic stroke represent a part of the clinical picture of COVID-19 and highlights the need for vaccination against COVID-19.

Therapeutics

- 7. Ivermectin for preventing and treating COVID-19.** Popp M, et al. *Cochrane Database Syst Rev*. 2021 Jul 28;7:CD015017. doi: 10.1002/14651858.CD015017.pub2.
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD015017.pub2/full>
Authors' conclusions: Based on the current very low- to low-certainty evidence, we are uncertain about the efficacy and safety of ivermectin used to treat or prevent COVID-19. The completed studies are small and few are considered high quality. Several studies are underway that may produce clearer answers in review updates. Overall, the reliable evidence available does not support the use ivermectin for treatment or prevention of COVID-19 outside of well-designed randomized trials.
- 8. Noninvasive respiratory support outside the intensive care unit for acute respiratory failure related to coronavirus-19 disease: a systematic review and meta-analysis.** Cammarota G, et al. *Crit Care*. 2021 Jul 30;25(1):268. doi: 10.1186/s13054-021-03697-0.
<https://ccforum.biomedcentral.com/articles/10.1186/s13054-021-03697-0>
Seventeen investigations (14 peer-reviewed and 3 pre-prints) were included with a low risk of bias and a high heterogeneity, for a total of 3377 patients. The overall intra-hospital mortality of patients receiving NIRS outside the ICU was 36%. 26% of the patients failed NIRS and required intubation, with an intra-hospital mortality rising to 45%. Conclusions: During COVID-19 outbreak, delivering NIRS outside the ICU revealed as a feasible strategy to cope with the massive demand of ventilatory assistance.
- 9. Doxycycline for community treatment of suspected COVID-19 in people at high risk of adverse outcomes in the UK (PRINCIPLE): a randomised, controlled, open-label, adaptive platform trial.** PRINCIPLE Trial Collaborative Group. *Lancet Respir Med*. 2021 Jul 27:S2213-2600(21)00310-6. doi: 10.1016/S2213-2600(21)00310-6.
<https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/34329624/>
In patients with suspected COVID-19 in the community in the UK, who were at high risk of adverse outcomes, treatment with doxycycline was not associated with clinically meaningful

reductions in time to recovery or hospital admissions or deaths related to COVID-19, and should not be used as a routine treatment for COVID-19.

10. **Subcutaneous REGEN-COV Antibody Combination to Prevent Covid-19.** Covid-19 Phase 3 Prevention Trial Team. *N Engl J Med.* 2021 Aug 4. doi: 10.1056/NEJMoa2109682. https://www.nejm.org/doi/10.1056/NEJMoa2109682?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%20pubmed
REGEN-COV (previously known as REGN-COV2), a combination of the monoclonal antibodies casirivimab and imdevimab, has been shown to markedly reduce the risk of hospitalization or death among high-risk persons with Covid-19. Subcutaneous REGEN-COV prevented symptomatic Covid-19 and asymptomatic SARS-CoV-2 infection in previously uninfected household contacts of infected persons. Among the participants who became infected, REGEN-COV reduced the duration of symptomatic disease and the duration of a high viral load.
11. **Safety, tolerability, pharmacokinetic characteristics, and immunogenicity of MW33: A Phase 1 clinical study of the SARS-CoV-2 RBD-targeting monoclonal antibody.** Meng X, et al. *Emerg Microbes Infect.* 2021 Aug 4:1-11. doi: 10.1080/22221751.2021.1960900. <https://www.tandfonline.com/doi/full/10.1080/22221751.2021.1960900>
42 enrolled participants completed the MW33 infusion, and 40 participants completed the 85-day follow-up period. 34 participants received a single infusion of 4 (n=2), 10 (n=8), 20 (n=8), 40 (n=8), and 60 mg/kg (n=8) of MW33. 27 subjects in the test groups experienced 78 adverse events (AEs) post-dose, with an incidence of 79.4% (27/34). The most common AEs included abnormal laboratory test results, vascular and lymphatic disorders, and infectious diseases. The severity of AEs was mainly Grade 1 (92 AEs), and three Grade 2 and one Grade 4. In conclusion, MW33 was well-tolerated, demonstrated linear PK, with a lower positive rate of serum ADAs and antibody titers in healthy subjects.
12. **Therapeutic Anticoagulation with Heparin in Noncritically Ill Patients with Covid-19.** REMAP-CAP Investigators; ACTIV-4a Investigators; ATTACC Investigators, *N Engl J Med.* 2021 Aug 4. doi: 10.1056/NEJMoa2105911. https://www.nejm.org/doi/full/10.1056/NEJMoa2105911?query=featured_home
In noncritically ill patients with Covid-19, an initial strategy of therapeutic-dose anticoagulation with heparin increased the probability of survival to hospital discharge with reduced use of cardiovascular or respiratory organ support as compared with usual-care thromboprophylaxis.
13. **Therapeutic Anticoagulation with Heparin in Critically Ill Patients with Covid-19.** REMAP-CAP, ACTIV-4a, and ATTACC Investigators. *N Engl J Med.* 2021 Aug 4. DOI: 10.1056/NEJMoa2103417 <https://www.nejm.org/doi/full/10.1056/NEJMoa2103417>
In critically ill patients with Covid-19, an initial strategy of therapeutic-dose anticoagulation with heparin did not result in a greater probability of survival to hospital discharge or a greater number of days free of cardiovascular or respiratory organ support than did usual-care pharmacologic thromboprophylaxis.

Transmission / Infection Control

14. Outbreak of SARS-CoV-2 Infections, Including COVID-19 Vaccine Breakthrough Infections, Associated with Large Public Gatherings - Barnstable County, Massachusetts, July 2021.

Brown CM, et al. *MMWR Morb Mortal Wkly Rep.* 2021 Aug 6;70(31):1059-1062. doi: 10.15585/mmwr.mm7031e2. <https://doi.org/10.15585/mmwr.mm7031e2>

During July 2021, 469 cases of COVID-19 associated with multiple summer events and large public gatherings in a town in Barnstable County, Massachusetts, were identified among Massachusetts residents; vaccination coverage among eligible Massachusetts residents was 69%. Approximately three quarters (346; 74%) of cases occurred in fully vaccinated persons (those who had completed a 2-dose course of mRNA vaccine or had received a single dose of Janssen vaccine ≥ 14 days before exposure). 274 (79%) vaccinated patients with breakthrough infection were symptomatic. Among five COVID-19 patients who were hospitalized, four were fully vaccinated; no deaths were reported.

Vaccines / Immunology

15. Heterologous prime-boost vaccination with ChAdOx1 nCoV-19 and BNT162b2. DZIF-

VACCELERATE-CoVaKo study team. *Lancet Infect Dis.* 2021 Jul 29:S1473-3099(21)00420-5. doi: 10.1016/S1473-3099(21)00420-5. <http://www.thelancet.com/article/S1473309921004205/pdf>

Although we report a non-blinded and non-randomised study, the results obtained in more than 480 individuals who were primed with an adenoviral vector-based and boosted with an mRNA COVID-19 vaccine indicate increased efficacy of a heterologous prime-boost vaccination. This vaccination scheme is an interesting option if the thrombosis risk posed by adenoviral vector-based vaccines is a concern, and it increases flexibility in a setting of vaccine shortage. However, further studies need to address the safety and clinical efficacy of heterologous vaccination regimens.

16. Immune responses to a single dose of the AZD1222/Covishield vaccine in health care workers.

Jeewandara C, et al. *Nat Commun.* 2021 Jul 29;12(1):4617. doi: 10.1038/s41467-021-24579-7. <https://doi.org/10.1038/s41467-021-24579-7>

93.4% of naïve HCWs seroconverted, irrespective of age and gender. Previously infected HCWs, developed significantly higher ACE2 blocking antibodies and antibodies to the RBD for the variants B.1.1.7 and B.1.351. This study shows high seroconversion after one vaccine dose, but also suggests that one vaccine dose may be insufficient to protect against emerging variants.

17. Response to mRNA vaccination for COVID-19 among patients with multiple myeloma. Aaron J

Feinstein. [Providence author]. *Leukemia.* 2021 Jul 29;1-8. doi: 10.1038/s41375-021-01354-7. <https://www.nature.com/articles/s41375-021-01354-7>

Only 45% of active MM patients developed an adequate response, while 22% had a partial response. Lower spike antibody levels were associated with older age, impaired renal function, low lymphocyte counts, reduced uninvolved immunoglobulin levels, > second line of treatment, and among those not in complete remission. Patients who received mRNA-1273 vaccine had higher anti-spike antibody levels than those who were vaccinated with BNT162b2. Thus, most

MM patients have impaired responses to mRNA vaccination against COVID-19, and specific clinical and myeloma-related characteristics predict vaccine responsiveness.

18. Myopericarditis following mRNA COVID-19 Vaccination in Adolescents 12 through 18 Years of Age. Das BB, et al. *J Pediatr.* 2021 Jul 30:S0022-3476(21)00736-8. doi:

10.1016/j.jpeds.2021.07.044. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8321962>

In a cross-sectional study of 32 children, aged 12 through 18 years, diagnosed with probable myopericarditis following COVID-19 mRNA vaccination: 90% cases followed the second dose of vaccine and chest pain (100%) was the most common presenting symptom. All adolescents had an elevated plasma troponin concentration. Echocardiographic abnormalities were infrequent, and 84% showed normal cardiac function at presentation. However, cardiac magnetic resonance imaging (CMR), obtained in 16 patients (50%), revealed that 15 (94%) had late gadolinium enhancement consistent with myopericarditis. Most were treated with ibuprofen or an equivalent NSAID for symptomatic relief, one patient was treated primarily with a corticosteroid orally and three patients were given a corticosteroid orally after initial administration of ibuprofen or NSAID; two patients also received intravenous immune globulin. Symptom resolution was observed within 7 days in all patients. Our data suggest that symptoms due to myopericarditis following mRNA COVID-19 vaccination tend to be mild and transient.

19. Myocarditis and Pericarditis after Vaccination for COVID-19. Diaz GA, Parsons GT, Gering SK, Meier AR, Hutchinson IV, Robicsek A. [Providence authors]. *JAMA.* 2021 Aug 4. doi:

10.1001/jama.2021.13443. <https://jamanetwork.com/journals/jama/fullarticle/2782900>

Two distinct self-limited syndromes, myocarditis and pericarditis, were observed after COVID-19 vaccination. Myocarditis developed rapidly in younger patients, mostly after the second vaccination. Pericarditis affected older patients later, after either the first or second dose. Centers for Disease Control and Prevention recently reported a possible association between COVID-19 mRNA vaccines and myocarditis, primarily in younger male individuals within a few days after the second vaccination, at an incidence of about 4.8 cases per 1 million. This study shows a similar pattern, although at higher incidence, suggesting vaccine adverse event underreporting. Additionally, pericarditis may be more common than myocarditis among older patients.

20. COVID-19 Vaccine Safety in Adolescents Aged 12-17 Years - United States, December 14, 2020-July 16, 2021. Hause AM, et al. *MMWR Morb Mortal Wkly Rep.* 2021 Aug 6;70(31):1053-1058. doi: 10.15585/mmwr.mm7031e1. <https://doi.org/10.15585/mmwr.mm7031e1>

Approximately 129,000 U.S. adolescents aged 12-17 years enrolled in v-safe after Pfizer-

BioNTech vaccination; they reported local (63.4%) and systemic (48.9%) reactions with a frequency similar to that reported in preauthorization clinical trials. Systemic reactions were more common after dose 2. CDC and FDA continue to monitor vaccine safety and provide data to ACIP to guide COVID-19 vaccine recommendations.

Women & Children

21. **Parents' Intentions and Perceptions about COVID-19 Vaccination for Their Children: Results from a National Survey.** Szilagyi PG, et al. *Pediatrics*. 2021 Aug 3:e2021052335. doi: 10.1542/peds.2021-052335.

<https://pediatrics.aappublications.org/content/early/2021/08/02/peds.2021-052335.long>

In February – March 2021, we surveyed parent members of a nationally representative probability-based internet panel of ≈9,000 adults regarding their intent to have their children receive a COVID-19 vaccination. 1,745 parents responded. Likelihood of child COVID-19 vaccination was as follows: very likely (28%), somewhat likely (18%), somewhat unlikely (9%), very unlikely (33%), and unsure (12%). The stated likelihood of child vaccination was greater among parents of older children as well as parents who had Bachelor's or higher education, had already received or were likely to receive a COVID-19 vaccine, or had Democratic affiliation; variations existed by race/ethnicity. Less than half of US participants report that they are likely to have their child receive a COVID19 vaccine.

22. **Severe Acute Respiratory Syndrome Coronavirus 2 and Pregnancy Outcomes According to Gestational Age at Time of Infection.** Badr DA, et al. *Emerg Infect Dis*. 2021 Aug 5;27(10). doi: 10.3201/eid2710.211394. <https://dx.doi.org/10.3201/eid2710.211394>

After matching for possible confounders, we identified statistically significant increases in the exposed group of composite adverse obstetric outcomes at >20 weeks' gestation and of composite adverse neonatal outcomes at >26 weeks' gestation (p<0.001). Vaccination programs should target women early in pregnancy or before conception, if possible.

GUIDELINES & CONSENSUS STATEMENTS

[ACOG and SMFM Recommend COVID-19 Vaccination for Pregnant Individuals](#)

[American College of Rheumatology Guidance for COVID-19 Vaccination in Patients With Rheumatic and Musculoskeletal Diseases: Version 3.](#) *Arthritis Rheumatol*. 2021 Aug 4. doi: 10.1002/art.41928.

FDA / CDC / NIH / WHO Updates

Kaiser Family Foundation - [COVID-19 Vaccine Breakthrough Cases: Data from the States.](#)

NIH – [Covid-19 Treatment Guidelines](#), updated August 4, 2021 Anti-SARS-CoV-2 Monoclonal Antibodies & inhaled corticosteroids.

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