

COVID-19 Resource Desk

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New Research

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Survivorship & Rehabilitation

1. **Comorbidities associated with 30-day readmission following index coronavirus disease 2019 (COVID-19) hospitalization: A retrospective cohort study of 331,136 patients in the United States.** Nadimpalli G, et al. *Infect Control Hosp Epidemiol*. 2022 Oct 3:1-9. doi: 10.1017/ice.2022.232. <https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/article/comorbidities-associated-with-30day-readmission-following-index-coronavirus-disease-2019-covid19-hospitalization-a-retrospective-cohort-study-of-331136-patients-in-the-united-states/8D984EE74C449023EDFEE0BAE7C0A14D>

Readmission within 30 days was common among COVID-19 survivors. A better understanding of comorbidities associated with readmission will aid hospital care teams in improving postdischarge care. Additionally, it will assist hospital epidemiologists and quality administrators in planning resources, allocating staff, and managing bed-flow issues to improve patient care and safety.

Therapeutics

2. **Efficacy and safety of Paxlovid for COVID-19:a meta-analysis.** Zheng Q, et al. *J Infect*. 2022 Sep 30:S0163-4453(22)00557-6. doi: 10.1016/j.jinf.2022.09.027. <https://www.sciencedirect.com/science/article/pii/S0163445322005576>

Paxlovid is a recommended treatment for mild-moderate COVID-19 and risk factors for severe disease. With wide-spread use of Paxlovid, there have been case reports of individuals experiencing virologic rebound. Hence, meta-analysis of the efficiency and safety of Paxlovid in patients with COVID-19 is of great importance.

3. **Rapid selection of sotrovimab escape variants in SARS-CoV-2 Omicron infected immunocompromised patients.** Gliga S et al. *Clin Infect Dis*. 2022 Oct 3:ciac802. doi: 10.1093/cid/ciac802. <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciac802/6746719>

Immunocompromised patients face a considerable risk of prolonged viral shedding and emergence of escape mutations after early therapy with sotrovimab. These findings underscore the importance of careful monitoring and the need to conduct dedicated clinical trials for this patient population.

4. **Clinical, Virologic, and Immunologic Evaluation of Symptomatic Coronavirus Disease 2019 Rebound Following Nirmatrelvir/Ritonavir Treatment.** Epling BP et al. *Clin Infect Dis.* 2022 Oct 6:ciac663. doi: 10.1093/cid/ciac663. <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciac663/6749408>

Nirmatrelvir/ritonavir treatment does not impede adaptive immune responses to SARS-CoV-2. Clinical rebound corresponds to development of a robust antibody and T-cell immune response, arguing against a high risk of disease progression. The presence of infectious virus supports the need for isolation and assessment of longer treatment courses. Clinical trials registration. NCT04401436.

Transmission / Infection Control

5. **Comparative efficacy evaluation of disinfectants against severe acute respiratory syndrome coronavirus 2.** Lee GH, Park SH, Song BM, Kim DM, Han HJ, Park JY, Jo YW, Hwang MY, Sim KT, Kang SM, Tark D. *J Hosp Infect.* 2022 Sep 29:S0195-6701(22)00306-1. doi: 10.1016/j.jhin.2022.09.011. [https://www.journalofhospitalinfection.com/article/S0195-6701\(22\)00306-1/fulltext](https://www.journalofhospitalinfection.com/article/S0195-6701(22)00306-1/fulltext)

These results indicate that most commercially available disinfectants exert a disinfectant effect against SARS-CoV-2. However, certain disinfectants, especially citric acid and peracetic acid, need re-evaluation concerning their effective concentration and exposure time.

Vaccines / Immunology

6. **Effectiveness of primary series and booster vaccination against SARS-CoV-2 infection and hospitalisation among adolescents aged 12-17 years in Singapore: a national cohort study.** Chiew CJ, et al. *Lancet Infect Dis.* 2022 Sep 28:S1473-3099(22)00573-4. doi: 10.1016/S1473-3099(22)00573-4. [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(22\)00573-4/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00573-4/fulltext)

Among adolescents aged 12-17 years, vaccine effectiveness against confirmed SARS-CoV-2 infection after two doses of BNT162b2 decreased over time and increased after a third dose. Boosted adolescents were also the most protected from hospitalisation compared with fully vaccinated, partly vaccinated, and unvaccinated adolescents. Therefore, the booster dose of BNT162b2 can help to reduce the burden on the health-care system and individual morbidity during an omicron wave.

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7. **Waning of vaccine effectiveness against moderate and severe covid-19 among adults in the US from the VISION network: test negative, case-control study.** Ferdinands JM et al. *BMJ.* 2022 Oct 3;379:e072141. doi: 10.1136/bmj-2022-072141. <https://www.bmj.com/content/379/bmj-2022-072141>

Effectiveness of mRNA vaccines against moderate and severe covid-19 waned with time after vaccination. The findings support recommendations for a booster dose after a primary series and consideration of additional booster doses.

8. **Protective Effect of Previous SARS-CoV-2 Infection against Omicron BA.4 and BA.5 Subvariants.** Altarawneh HN et al. *N Engl J Med.* 2022 Oct 5. doi: 10.1056/NEJMc2209306. <https://www.nejm.org/doi/10.1056/NEJMc2209306>

In the main analysis, we estimated the effectiveness of previous infection against reinfection with BA.4 or BA.5 using the determination of S-gene target failure (SGTF) on PCR testing between May 7 and July 28, 2022.

9. **Safety, immunogenicity and antibody persistence of a bivalent Beta-containing booster vaccine against COVID-19: a phase 2/3 trial.** Chalkias S et al. *Nat Med.* 2022 Oct 6. doi: 10.1038/s41591-022-02031-7. <https://www.nature.com/articles/s41591-022-02031-7>

The mRNA-1273.211 booster doses (50- μ g or 100- μ g) 28 days after immunization elicited higher neutralizing antibody responses against the ancestral SARS-CoV-2 and Beta variant than those elicited 28 days after the second mRNA-1273 dose of the primary series (NCT04470427). Antibody responses 28 days and 180 days after the 50- μ g mRNA-1273.211 booster dose were also higher than those after a 50- μ g mRNA-1273 booster dose (NCT04405076) against the ancestral SARS-CoV-2 and Beta, Omicron BA.1 and Delta variants, and all pre-specified immunogenicity objectives were met. The safety and reactogenicity profile of the bivalent mRNA-1273.211 booster (50- μ g) was similar to the booster dose of mRNA-1273 (50- μ g). Immunization with the primary series does not set a ceiling to the neutralizing antibody response, and a booster dose of the bivalent vaccine elicits a robust response with titers that are likely to be protective against COVID-19. These results indicate that bivalent booster vaccines can induce potent, durable and broad antibody responses against multiple variants, providing a new tool in response to emerging variants.

Women & Children

10. **Incidence of Myocarditis/Pericarditis Following mRNA COVID-19 Vaccination Among Children and Younger Adults in the United States.** Goddard K, et al. *Ann Intern Med.* 2022 Oct 4. doi: 10.7326/M22-2274. <https://www.acpjournals.org/doi/10.7326/M22-2274>

From 14 December 2020 through 31 May 2022 (persons 18–39 years) and 20 August 2022 (persons 5–17 years), 320 potential cases of myocarditis/pericarditis were identified 1 to 98 days after 6 992 340 vaccine doses as part of primary series COVID-19 vaccination, with 224 (70%) verified. Of these, 137 (61%) occurred 0 to 7 days after vaccination; 18 were after the first dose (of 3 562 311 doses administered) and 119 were after the second dose (of 3 430 029 doses administered).

11. **Association of Early Steroid Administration with Outcomes of Children Hospitalized for COVID-19 Without Multisystem Inflammatory Syndrome in Children.** Tripathi S et al. *JAMA Pediatr.* 2022 Oct 3. doi: 10.1001/jamapediatrics.2022.3611. <https://jamanetwork.com/journals/jamapediatrics/fullarticle/2796975>

Steroid treatment within 2 days of hospital admission in a heterogeneous cohort of pediatric patients hospitalized for COVID-19 without MIS-C did not have a statistically significant association with hospital LOS.

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