

COVID-19 Resource Desk

#6 | 5.27.2020 to 6.2.2020

Prepared by [System Library Services](#)

New Research

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

[Retraction Watch: retracted COVID-19 papers](#)

Clinical Syndrome

- 1. Loss of Smell and Taste in 2013 European Patients with Mild to Moderate COVID-19.** Lechien JR et al. *Ann Intern Med.* 2020 May 26. doi: <https://doi.org/10.7326/M20-2428>
<https://www.acpjournals.org/doi/10.7326/M20-2428>
Findings: Of 2013 patients, 1754 patients (87%) reported loss of smell, whereas 1136 (56%) reported taste dysfunction. Mean time from the end of the disease to the evaluation was 7.8 days; mean duration of general symptoms (excluding loss of smell and taste) was 11.5 days. Most patients had loss of smell after other general and otolaryngologic symptoms. At the time of evaluation, 573 of 1754 patients regained their sense of smell, 60.9% of them between 5 and 14 days after the onset of smell loss; mean duration of olfactory dysfunction was 8.4 days.
- 2. Comparison of Clinical Characteristics of Patients with Asymptomatic vs Symptomatic Coronavirus Disease 2019 in Wuhan, China.** Yang R, Gui X, Xiong Y. *JAMA Netw Open.* 2020;3(5):e2010182. doi:10.1001/jamanetworkopen.2020.10182
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2766237>
Findings: To control the spread of COVID-19 and isolate patients as early as possible, the Chinese government requested that close contacts of individuals with COVID-19 must be screened for SARS-CoV-2 infection. During the screening process, we found some patients whose test results were positive for SARS-CoV-2 but who had no symptoms or signs throughout the course of the disease. This case series aimed to describe the clinical characteristics of patients with SARS-CoV-2 infection confirmed by reverse transcription–polymerase chain reaction (RT-PCR) from 26 transmission cluster series in Wuhan, China, from December 24, 2019, to February 24, 2020.
- 3. CT in coronavirus disease 2019 (COVID-19): a systematic review of chest CT findings in 4410 adult patients.** Ojha V, Mani A, Pandey NN, Sharma S, Kumar S. *Eur Radiol.* 2020 May 30. doi: 10.1007/s00330-020-06975-7. <https://link.springer.com/article/10.1007/s00330-020-06975-7>
Findings: Ground glass opacities (GGOs), whether isolated or coexisting with consolidations, in bilateral and subpleural distribution, are the most prevalent chest CT findings in adult COVID-19 patients. Follow-up CT shows a progression of GGOs into a mixed pattern, reaching a peak at 10-11 days, before gradually resolving or persisting as patchy fibrosis. Younger people tend to

have more GGOs. Older or sicker people tend to have more extensive involvement with consolidations.

4. **Radiographic findings in 240 patients with COVID-19 pneumonia: time-dependence after the onset of symptoms.** Vancheri SG, Savietto G, Ballati F, et al. *Eur Radiol.* 2020 May 30. doi: 10.1007/s00330-020-06967-7. <https://link.springer.com/article/10.1007/s00330-020-06967-7>
Findings: The predominant lung changes were GGO and reticular alteration, while consolidation was less frequent. The typical distribution pattern was bilateral, peripheral, or both peripheral and central and involved predominantly the lower and middle fields. Chest radiography showed lung abnormalities in 75% of patients with confirmed SARS-CoV-2 infection, range varied from 63.3 to 83.9%, respectively, at 0-2 days and > 9 days from the onset of symptoms.
5. **Characterization and clinical course of 1000 patients with coronavirus disease 2019 in New York: retrospective case series.** Argenziano MG et al. *BMJ.* 2020 May 29;369:m1996. doi: 10.1136/bmj.m1996. <https://www.bmj.com/content/369/bmj.m1996.long>
Findings: Patients admitted to hospital with covid-19 at this medical center faced major morbidity and mortality, with high rates of acute kidney injury and inpatient dialysis, prolonged intubations, and a bimodal distribution of time to intubation from symptom onset.
6. **Acute Liver Injury in COVID-19: Prevalence and Association with Clinical Outcomes in a Large US Cohort.** Phipps MM, Barraza LH, LaSota ED, et al. *Hepatology.* 2020 May 30. doi: 10.1002/hep.31404. <https://aasldpubs.onlinelibrary.wiley.com/doi/abs/10.1002/hep.31404>
Findings: Acute liver injury is common in patients who test positive for SARS-CoV-2, but is most often mild. However, among the 6.4% of patients with severe liver injury, a severe disease course should be anticipated.
7. **Presenting characteristics, comorbidities, and outcomes of patients coinfecting with COVID-19 and *Mycoplasma pneumoniae* in the USA.** Gayam V, Konala VM, Naramala S, et al. *J Med Virol.* 2020 May 25. doi: 10.1002/jmv.26026. <https://onlinelibrary.wiley.com/doi/full/10.1002/jmv.26026>
Findings: We present a study in which 6 of 350 patients confirmed with COVID-19 were also diagnosed with *M. pneumoniae* infection. Common symptoms at the onset of illness included fever (six [100%] patients); five (83.3%) patients had a cough, shortness of breath, and fatigue. The other symptoms were myalgia (66.6%), gastrointestinal symptoms (33.3%-50%), and altered mental status (16.7%). The laboratory parameters include lymphopenia, elevated erythrocyte sedimentation rate, C-reactive protein, lactate dehydrogenase, interleukin-6, serum ferritin, and D-dimer in all six (100%) patients. The chest X-ray at presentation showed bilateral infiltrates in all the patients (100%). We also described electrocardiogram findings, complications, and treatment during hospitalization in detail. One patient died during the hospital course.

8. **Venous Thrombosis Among Critically Ill Patients With Coronavirus Disease 2019 (COVID-19).** Nahum J, Morichau-Beauchant T, Daviaud F, et al. *JAMA Netw Open*. 2020;3(5):e2010478. doi:10.1001/jamanetworkopen.2020.10478
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2766543>
Findings: This case series reports a systematic assessment of deep vein thrombosis among patients in an intensive care unit in France with severe COVID-19.
9. **Respiratory Mechanics of COVID-19 vs. Non-COVID-19 Associated Acute Respiratory Distress Syndrome.** Haudebourg AF, Perier F, Tuffet S, et al. *Am J Respir Crit Care Med*. 2020 Jun 1. doi: 10.1164/rccm.202004-1226LE.
<https://www.atsjournals.org/doi/pdf/10.1164/rccm.202004-1226LE>
Findings: Most of patients admitted to the intensive care unit with a severe presentation of COVID-19 fulfill the acute respiratory distress syndrome (ARDS) criteria and require invasive mechanical ventilation. In such patients, knowledge of respiratory mechanics and potential for lung recruitability may provide valuable information to guide ventilator's settings adjustments. However, physiological description of COVID-19 associated ARDS and its comparison to non COVID-19 classical ARDS remain scarce in the literature.

Diagnosics & Screening

10. **Clinically significant fear and anxiety of COVID-19: A psychometric examination of the Coronavirus Anxiety Scale.** Lee SA, Mathis AA, Jobe MC, Pappalardo EA. *Psychiatry Res*. 2020 May 20;290:113112. doi: 10.1016/j.psychres.2020.113112.
<https://www.sciencedirect.com/science/article/pii/S016517812030740X>
Findings: The present study examined the psychometric properties of the Coronavirus Anxiety Scale (CAS) using an online survey of 398 adult Amazon workers in the U.S. Confirmatory factor analyses demonstrated that the CAS measures a reliable ($\alpha = 0.92$), unidimensional construct with a structure that was shown to be invariant across gender, race, and age. Construct validity was demonstrated with correlations between CAS scores and demographics, coronavirus diagnosis, history of anxiety, coronavirus fear, functional impairment, alcohol/drug coping, religious coping, hopelessness, suicidal ideation, as well as social attitudes (e.g., satisfaction with President Trump). The CAS also demonstrated solid discrimination ability for functional impairment (AUC =0.88), while the original cut score of ≥ 9 (76% sensitivity and 90% specificity) showed the strongest diagnostic effectiveness among scores. Overall, these findings are largely consistent with the results of the first CAS investigation and support the validity of this mental health screener for COVID-19 related research and practice.
11. **Universal and Serial Laboratory Testing for SARS-CoV-2 at a Long-Term Care Skilled Nursing Facility for Veterans - Los Angeles, California, 2020.** Dora AV, Winnett A, Jatt LP, et al. *MMWR Morb Mortal Wkly Rep*. 2020 May 29;69(21):651-655. doi: 10.15585/mmwr.mm6921e1.
https://www.cdc.gov/mmwr/volumes/69/wr/mm6921e1.htm?s_cid=mm6921e1_w
Findings: On March 28, 2020, two residents of a long-term care skilled nursing facility (SNF) at the Veterans Affairs Greater Los Angeles Healthcare System (VAGLAHS) had positive test results for SARS-CoV-2 by RT-PCR testing. During March 29–April 23, all SNF residents underwent serial

(approximately weekly) nasopharyngeal SARS-CoV-2 RT-PCR testing. All SNF clinical and nonclinical staff members were also screened for SARS-CoV-2 by RT-PCR during March 29-April 10. Nineteen of 99 (19%) residents and eight of 136 (6%) staff members had positive test results for SARS-CoV-2 during March 28-April 10. This report describes an outbreak of COVID-19 in an SNF, with case identification accomplished by implementing several rounds of RT-PCR testing, permitting rapid isolation of both symptomatic and asymptomatic residents with COVID-19. The outbreak was successfully contained following implementation of this strategy.

- 12. Clinical Evaluation and Utilization of Multiple Molecular In Vitro Diagnostic Assays for the Detection of SARS-CoV-2.** Cradic K, Lockhart M, Ozbolt P, Fatica L, et al. *Am J Clin Pathol*. 2020 May 28;aqaa097. doi: 10.1093/ajcp/aqaa097. <https://academic.oup.com/ajcp/advance-article/doi/10.1093/ajcp/aqaa097/5848026>
Findings: To evaluate the clinical performance of 3 molecular assays for SARS-CoV-2: Abbott ID NOW COVID-19 (Abbott ID NOW), DiaSorin Molecular Simplexa COVID-19 Direct (DiaSorin Simplexa), and Roche cobas 6800 SARS-CoV-2 (Roche cobas) assays. The positive percent agreement was 91% (95% confidence interval [CI], 0.76-0.97) for Abbott ID NOW and 100% (95% CI, 0.90-1.00) for DiaSorin Simplexa and Roche cobas. The negative percent agreement was 100% (95% CI, 0.98-1.00) for all 3 assays. All swab types tested with the Abbott assay produced concordant results. Polymerase chain reaction assays had approximately 10 to 100 times lower limits of detection than Abbott ID NOW. Based on these evaluations, a multiplatform testing approach is proposed, depending on patient population and assay sensitivity, to address testing needs during a public health emergency.
- 13. Recurrent Positive Reverse Transcriptase–Polymerase Chain Reaction Results for Coronavirus Disease 2019 in Patients Discharged From a Hospital in China.** Hu R, Jiang Z, Gao H, et al. *JAMA Netw Open*. 2020;3(5):e2010475. doi:10.1001/jamanetworkopen.2020.10475
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2766379>
Findings: We collected the clinical data of patients who had been cured and discharged from a hospital designated for patients with COVID-19 in Guizhou Province, China, between January 25, 2020, and February 26, 2020. All COVID-19 infections were classified into 4 different types—mild, moderate, severe, and critical. On the basis of our follow-up results, 11 of 69 patients with COVID-19 showed positive RT-PCR results after discharge, which suggests that some recovered patients may still be virus carriers even after they reach the basic discharge criteria.
- 14. Performance of Abbott ID NOW COVID-19 rapid nucleic acid amplification test in nasopharyngeal swabs transported in viral media and dry nasal swabs, in a New York City academic institution.** Basu A, Zinger T, Inghima K, et al. *J Clin Microbiol*. 2020 May 29;JCM.01136-20. doi: 10.1128/JCM.01136-20.
<https://jcm.asm.org/content/early/2020/05/28/JCM.01136-20.long>
Findings: We present here the results of comparisons between Abbott ID NOW COVID-19 and Cepheid Xpert Xpress SARS-CoV-2 using nasopharyngeal swabs transported in viral transport media and comparisons between Abbott ID NOW COVID-19 and Cepheid Xpert Xpress SARS-CoV-2 using nasopharyngeal swabs transported in viral transport media for Cepheid and dry nasal swabs for Abbott ID NOW. Regardless of method of collection and sample type, Abbott ID

NOW COVID-19 had negative results in a third of the samples that tested positive by Cepheid Xpert Xpress when using nasopharyngeal swabs in viral transport media and 45% when using dry nasal swabs.

15. **Suitability and Sufficiency of telehealth clinician-observed participant-collected samples for SARS-CoV2 testing: the iCollect Cohort Pilot Study.** Guest JL, Sullivan PS, Valentine-Graves M, et al. *JMIR Public Health Surveill.* 2020 May 29. doi: 10.2196/19731.
<https://preprints.jmir.org/preprint/19731/accepted>
Findings: These pilot data indicate that most participant-collected OPS, saliva and DBS specimens are suitable and sufficient for testing for SARS-CoV-2 RNA and serology. Clinical observers rated the collection of specimens as suitable for testing and visual and quantitative laboratory assessment indicated that specimens were biologically sufficient. These data support the utility of participant-collected and mailed-in specimens for SARS-CoV-2.

16. **Systematic Review and Meta-Analysis on the Value of Chest CT in the Diagnosis of Coronavirus Disease (COVID-19): Sol Scientiae, Illustra Nos.** Adams HJA, Kwee TC, Yakar D, Hope MD, Kwee RM. *AJR Am J Roentgenol.* 2020 Jun 1:1-9. doi: 10.2214/AJR.20.23391.
<https://www.ajronline.org/doi/full/10.2214/AJR.20.23391>
Findings: Diagnostic accuracy studies on chest CT in COVID-19 suffer from methodologic quality issues. Chest CT appears to have a relatively high sensitivity in symptomatic patients at high risk of COVID-19, but it cannot exclude COVID-19. Specificity is poor. These data, along with other local factors such as COVID-19 prevalence, available real-time reverse transcriptase-polymerase chain reaction tests, staff, hospital, and CT scanning capacity, can be useful to healthcare professionals and policy makers to decide on the utility of chest CT for COVID-19 detection in the hospital setting.

17. **Delayed specific IgM antibody responses observed among COVID-19 patients with severe progression.** Shen L, Wang C, Zhao J, et al. *Emerg Microbes Infect.* 2020 Dec;9(1):1096-1101. doi: 10.1080/22221751.2020.1766382.
<https://www.tandfonline.com/doi/full/10.1080/22221751.2020.1766382>
Findings: Molecular diagnosis of COVID-19 is typically performed via nucleic acid-based detection of the virus from swabs, sputum or bronchoalveolar lavage fluid (BALF). However, the positive rate from the commonly used specimens (swabs or sputum) was less than 75%. Immunological assays for SARS-CoV-2 are needed to accurately diagnose COVID-19. Sera were collected from patients or healthy people in a local hospital in Xiangyang, Hubei Province, China. The SARS-CoV-2 specific IgM antibodies were then detected using a SARS-CoV-2 IgM colloidal gold immunochromatographic assay (GICA). Results were analysed in combination with sera collection date and clinical information. The GICA was found to be a useful test to complement existing PCR-based assays for confirmation of COVID-19, and a delayed specific IgM antibody response was observed among COVID-19 patients with severe progression.

- 18. Hospitalization and Mortality among Black Patients and White Patients with Covid-19.** Price-Haywood EG, Burton J, Fort D, Seoane L. *N Engl J Med.* 2020 May 27. doi: 10.1056/NEJMsa2011686. <https://www.nejm.org/doi/full/10.1056/NEJMsa2011686>
Findings: In a large cohort in Louisiana, 76.9% of the patients who were hospitalized with Covid-19 and 70.6% of those who died were black, whereas blacks comprise only 31% of the Ochsner Health population. Black race was not associated with higher in-hospital mortality than white race, after adjustment for differences in sociodemographic and clinical characteristics on admission.
- 19. Association of Stay-at-Home Orders With COVID-19 Hospitalizations in 4 States.** Sen S, Karaca-Mandic P, Georgiou A. *JAMA.* 2020 May 27. doi: 10.1001/jama.2020.9176. <https://jamanetwork.com/journals/jama/fullarticle/2766673>
Findings: In analyses of the effectiveness of response measures to the outbreak of coronavirus disease 2019 (COVID-19), most studies have used the number of confirmed cases or deaths. However, case count is a conservative estimate of the actual number of infected individuals in the absence of community-wide serologic testing. Death count is a lagging metric and insufficient for proactive hospital capacity planning. A more valuable metric for assessing the effects of public health interventions on the health care infrastructure is hospitalizations.¹ As of April 18, 2020, governors in 42 states had issued statewide executive “stay-at-home” orders to help mitigate the risk that COVID-19 hospitalizations would overwhelm their state’s health care infrastructure. This study assessed the association between these orders and hospitalization trends.
- 20. Prevalence of SARS-CoV-2 Among Patients Admitted for Childbirth in Southern Connecticut.** Campbell KH, Tornatore JM, Lawrence KE, et al. *JAMA.* May 26, 2020. doi:10.1001/jama.2020.8904 <https://jamanetwork.com/journals/jama/fullarticle/2766650>
Findings: A study conducted in New York City reported a 13.5% prevalence of asymptomatic infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in women presenting for childbirth. On March 30, 2020, an initially asymptomatic woman admitted to the Yale New Haven Health system developed cough and fever soon after childbirth; testing confirmed SARS-CoV-2 infection. This event prompted the development of a SARS-CoV-2 screening and testing program of patients presenting for childbirth. Our findings suggest a low (<3%) prevalence of positive SARS-CoV-2 test results among asymptomatic patients in a pregnant population outside of the highly endemic region of New York City.
- 21. COVID-19: in the footsteps of Ernest Shackleton.** Ing AJ, Cocks C, Green PJ. *Thorax.* 27 May 2020. doi: 10.1136/thoraxjnl-2020-215091 <https://thorax.bmj.com/content/early/2020/05/27/thoraxjnl-2020-215091>
Findings: We describe what we believe is the first instance of complete COVID-19 testing of all passengers and crew on an isolated cruise ship during the current COVID-19 pandemic. Of the 217 passengers and crew on board, 128 tested positive for COVID-19 on reverse transcription–PCR (59%). Of the COVID-19-positive patients, 19% (24) were symptomatic; 6.2% (8) required medical evacuation; 3.1% (4) were intubated and ventilated; and the mortality was 0.8% (1). The majority of COVID-19-positive patients were asymptomatic (81%, 104 patients). We

conclude that the prevalence of COVID-19 on affected cruise ships is likely to be significantly underestimated, and strategies are needed to assess and monitor all passengers to prevent community transmission after disembarkation.

- 22. Prescription Fill Patterns for Commonly Used Drugs During the COVID-19 Pandemic in the United States.** Vaduganathan M, van Meijgaard J, Mehra MR, Joseph J, O'Donnell CJ, Warraich HJ. *JAMA*. May 28, 2020. doi:10.1001/jama.2020.9184
<https://jamanetwork.com/journals/jama/fullarticle/2766773>
Findings: Conflicting information regarding the benefits of hydroxychloroquine/chloroquine and azithromycin in coronavirus disease 2019 (COVID-19) treatment and hypothetical concerns for drugs, such as angiotensin-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs), have challenged care during the pandemic. However, limited data are available about how prescription of these therapies has changed. The objective of this exploratory analysis was to evaluate prescription patterns of these therapies, along with other commonly used drugs for reference, in the United States during the COVID-19 pandemic. We hypothesized that the prescription of hydroxychloroquine/chloroquine and azithromycin would exceed historical estimates while ACE inhibitor/ARB use would be reduced.
- 23. Reduction of secondary transmission of SARS-CoV-2 in households by face mask use, disinfection and social distancing: a cohort study in Beijing, China.** *BMJ Global Health* 2020;5:e002794. <https://gh.bmj.com/content/bmjgh/5/5/e002794.full.pdf>
Findings: The study confirms the highest risk of transmission prior to symptom onset, and provides the first evidence of effectiveness of mask use, disinfection and social distancing in preventing COVID-19. We also show evidence of fecal transmission. This can inform guidelines for community prevention in settings of intense COVID-19 epidemics.
- 24. Impact of Public Health Interventions on Seasonal Influenza Activity During the SARS-CoV-2 Outbreak in Korea.** Lee H, Lee H, Song KH, et al. *Clin Infect Dis*. 2020 May 30:ciaa672. doi: 10.1093/cid/ciaa672. <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciaa672/5848838>
Findings: Efforts to activate high level national response not only led to a decrease in COVID-19, but also substantial decrease in seasonal influenza activity. Interventions applied to control COVID-19 may serve as useful strategies for prevention and control of influenza in upcoming seasons.
- 25. Introductions and early spread of SARS-CoV-2 in the New York City area.** Gonzalez-Reiche AS et al. *Science*. 2020 May 29:eabc1917. doi: 10.1126/science.abc1917.
<https://science.sciencemag.org/content/early/2020/05/28/science.abc1917.long>
Findings: New York City (NYC) has emerged as one of the epicenters of the current SARS-CoV-2 pandemic. To identify the early transmission events underlying the rapid spread of the virus in the NYC metropolitan area, we sequenced the virus causing COVID-19 in patients seeking care at the Mount Sinai Health System. Phylogenetic analysis of 84 distinct SARS-CoV2 genomes indicates multiple, independent but isolated introductions mainly from Europe and other parts of the United States. Moreover, we find evidence for community transmission of SARS-CoV-2 as

suggested by clusters of related viruses found in patients living in different neighborhoods of the city.

26. **Risk for COVID-19 Resurgence Related to Duration and Effectiveness of Physical Distancing in Ontario, Canada.** Tuite AR, Greer AL, De Keninck S, Fisman DN. *Ann Intern Med.* 2020 May 27. doi: 10.7326/M20-2945. <https://www.acpjournals.org/doi/10.7326/M20-2945>
Findings: To date in Ontario, the number of cases in ICUs has remained below current (recently expanded) ICU capacity. The provincial response was initiated in mid-March with the declaration of a state of emergency on 17 March 2020. Without intervention, we projected that Ontario would have rapidly exceeded ICU capacity and observed substantially higher mortality. Our modeling also shows the challenges associated with relaxation of physical distancing measures without a concomitant increase in other public health measures. Specifically, when the number of contacts between persons returns to more than 50% of normal, we expect disease activity to resurge rapidly and ICUs to quickly reach capacity. Our model results suggest that in the absence of improved capacity for testing and contact tracing as a means of controlling COVID-19 spread, policymakers could consider staged relaxation of physical distancing and monitor changes in contacts (for example, using digital approaches) as an early warning signal.
27. **Evidence for Limited Early Spread of COVID-19 Within the United States, January–February 2020.** Jordan MA, Rudman SL, et al. *MMWR Morb Mortal Wkly Rep.* 29 May 2020. DOI: <http://dx.doi.org/10.15585/mmwr.mm6922e1>
Findings: Information suggests that limited community transmission of SARS-CoV-2 in the United States occurred between the latter half of January and the beginning of February, following an importation of SARS-CoV-2 from China. This importation initiated a lineage, the Washington State clade, which subsequently spread throughout the Seattle metropolitan area and possibly elsewhere. Several importations of SARS-CoV-2 from Europe followed in February and March. It is not known how many U.S. infections occurred during February and March, but overall disease incidence before February 28 was too low to be detected through emergency department syndromic surveillance data.

Healthcare Delivery & Healthcare Workers

28. **COVID-19 infections among healthcare workers exposed to a patient with a delayed diagnosis of COVID-19.** Baker MA, Rhee C, Fiumara K, et al. *Infect Control Hosp Epidemiol.* 2020 May 27:1-9. doi: 10.1017/ice.2020.256. https://www.cambridge.org/core/services/aop-cambridge-core/content/view/0E33EC04F36251CDE10F0856777B6F3C/S0899823X20002561a.pdf/covid19_infections_among_healthcare_workers_exposed_to_a_patient_with_a_delayed_diagnosis_of_covid19.pdf
Findings: We report on Covid-19 infection risk amongst healthcare workers exposed to a patient diagnosed with Covid-19 on day 13 of hospitalization. There were 44 healthcare workers exposed to the patient before contact and droplet precautions were implemented: of these, 2/44 (5%) developed Covid-19 potentially attributable to the exposure.

29. **The impact of novel coronavirus SARS-CoV-2 among healthcare workers in hospitals: An aerial overview.** Xiang B, Li P, Yang X, Zhong S, Manyande A, Feng M. *Am J Infect Control*. 2020 May 25:S0196-6553(20)30316-3. doi: 10.1016/j.ajic.2020.05.020.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7247977/>
Findings: The ongoing outbreak of COVID-19, caused by the novel coronavirus SARS-CoV-2, places healthcare workers at an increased risk of infection as they are in close contact with patients. In this article, we report an overview of cases of infected healthcare workers in China and Italy during the early periods of the COVID-19 epidemic. China's coronavirus response highlights the importance of implementing effective public health strategies. The authorities worldwide therefore, need to be extremely cautious when they implement stringent protective measures that safeguard healthcare workers in hospitals and counteract the threats created by the pandemic.
30. **Accountability to Population Health in the COVID-19 Pandemic: Designing Health Care Delivery within a Social Responsibility Framework.** Cutter CM, Nelson C, Abir M. *Popul Health Manag*. 2020 May 27. doi: 10.1089/pop.2020.0096.
<https://www.liebertpub.com/doi/full/10.1089/pop.2020.0096>
Findings: In the United States, hospitals and health systems frequently function within silos and operate at or near capacity. During the coronavirus (COVID-19) pandemic, this paradigm of fragmented care delivery has proven problematic because individual hospital and health system resources can be quickly overwhelmed by a surge in health care demand. The continued acute response and planning for the post-acute phase of this pandemic will require reconceptualizing health systems design and health care delivery within a social responsibility framework that manifests an ethical obligation for accountability to population health—the distribution of health determinants and outcomes across a community. The preliminary experience with COVID-19 has revealed that regional coordination of health care resources and capacity must go beyond individual hospital and health system silos. The social responsibility principles of equitable organizational governance, consumer safeguards, community engagement, and transparency should guide strategies to optimize population health when adapting the acute response and planning for the post-acute phase of the COVID-19 pandemic.
31. **A simulation training course for family medicine residents in China managing COVID-19.** Shi D, Lu H, Wang H, et al. *Aust J Gen Pract*. 2020 Jun;49(6):364-368. doi: 10.31128/AJGP-04-20-5337.
Findings: A total of 25 trainees participated in the simulation, consisting of first-, second- and third-year family medicine residents. Significant improvement was observed in their knowledge of COVID-19, and sub-analysis showed that all three grades of residents improved their knowledge significantly. Ninety-six per cent of participants believed the simulation was very helpful. The simulation scenario improves crisis management skills for family physicians managing the high risk of transmission of respiratory infectious diseases.
32. **Factors Associated with Resilience Among Medical Staff in Radiology Departments During The Outbreak of 2019 Novel Coronavirus Disease (COVID-19): A Cross-Sectional Study.** Huang L, Wang Y, Liu J, et al. *Med Sci Monit*. 2020 May 29;26:e925669. doi: 10.12659/MSM.925669.

<https://clinowl.com/factors-associated-with-resilience-among-medical-staff-in-radiology-departments-during-the-outbreak-of-2019-novel-coronavirus-disease-covid-19-a-cross-sectional-study/>

Findings: The resilience level of the medical staff in the radiology departments during the outbreak of COVID-19 was generally low, particularly regarding toughness. More attention should be paid to resilience influence factors such as high perceived stress, female gender, lack of understanding of COVID-19 and protective measures, and lack of protective materials, and targeted interventions should be undertaken to improve the resilience level of the medical staff in the radiology departments during the outbreak of COVID-19.

33. **Research Progress of Coronavirus Based on Bibliometric Analysis.** Zhai F, Zhai Y, Cong C, et al. *Int J Environ Res Public Health*. 2020 May 26;17(11):E3766. doi: 10.3390/ijerph17113766.

<https://www.mdpi.com/1660-4601/17/11/3766/htm>

Findings: International cooperation is an important way to accelerate research progress and achieve success. Developing corresponding vaccines and drugs are the current hotspots and research directions.

34. **Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: an international cohort study.** COVIDSurg Collaborative. *Lancet* 2020 May 29. [https://doi.org/10.1016/S0140-6736\(20\)31182-X](https://doi.org/10.1016/S0140-6736(20)31182-X)

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)31182-X/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31182-X/fulltext)

Findings: Postoperative pulmonary complications occur in half of patients with perioperative SARS-CoV-2 infection and are associated with high mortality. Thresholds for surgery during the COVID-19 pandemic should be higher than during normal practice, particularly in men aged 70 years and older. Consideration should be given for postponing non-urgent procedures and promoting non-operative treatment to delay or avoid the need for surgery.

35. **Creating Wellness in a Pandemic: A Practical Framework for Health Systems Responding to Covid-19.** Adibe B, Perticone K, Hebert C. *NEJM Catalyst* 2020 Jun 1.

<https://catalyst.nejm.org/doi/full/10.1056/cat.20.0218>

Findings: The emergence of the novel coronavirus SARS-CoV-2 and resulting global pandemic have significantly taxed the capabilities of healthcare systems around the globe. The long-term psychological impact of the Covid-19 pandemic on front line health care workers has yet to be fully understood. Attention to staff mental health and well-being is a critical aspect of crisis management. However, health systems lack a practical model for providing mental health support to front-line staff engaged with the pandemic. We describe a simple, easy to follow framework developed at Rush University Medical Center in Chicago, Illinois as an interdisciplinary, proactive effort that promotes staff well-being during Covid-19 and with generalizability to other similar healthcare crises.

Prognosis

36. **ICU and Ventilator Mortality Among Critically Ill Adults with Coronavirus Disease 2019.**

Sara C Auld, Mark Caridi-Scheible, James M Blum, et al. *Crit Care Med*. 2020 May 26. doi: 10.1097/CCM.0000000000004457.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7255393/>

Findings: To determine mortality rates among adults with critical illness from COVID-19 within an academic health center network in Atlanta, Georgia. Among 217 critically ill patients, mortality for those who required mechanical ventilation was 35.7% (59/165), with 4.8% of patients (8/165) still on the ventilator at the time of this report. Overall mortality to date in this critically ill cohort is 30.9% (67/217) and 60.4% (131/217) patients have survived to hospital discharge. Despite multiple reports of mortality rates exceeding 50% among critically ill adults with COVID-19, particularly among those requiring mechanical ventilation, our early experience indicates that many patients survive their critical illness.

37. **Impact of anticoagulation prior to COVID-19 infection: a propensity score-matched cohort study.** Tremblay D, van Gerwen M, Alsen M, et al. *Blood*. 2020 May 27: blood.2020006941. doi: 10.1182/blood.2020006941. <https://ashpublications.org/blood/article-lookup/doi/10.1182/blood.2020006941>

Findings: Empiric therapeutic anticoagulation (AC) is now being employed in clinical practice at many centers, and will be evaluated in randomized clinical trials. We sought to provide evidence either for or against the use of therapeutic anticoagulation among these patients. To this end we performed a retrospective analysis of patients with confirmed COVID-19, comparing outcomes among those who were and were not receiving AC for unrelated indications at the time of COVID-19 diagnosis. Our hypothesis was that AC prior to (and during the earliest stages of) COVID-19 infection would be protective for COVID-19 related outcomes.

38. **Impact of cardiovascular disease and cardiac injury on in-hospital mortality in patients with COVID-19: a systematic review and meta-analysis.** Li X, Guan B, Su T, et al. *Heart*. 2020 May 27: heartjnl-2020-317062. doi: 10.1136/heartjnl-2020-317062.

<https://heart.bmj.com/content/early/2020/05/26/heartjnl-2020-317062>

Findings: COVID-19 patients with underlying cardiovascular comorbidities, including CVD and hypertension, may face a greater risk of fatal outcomes. Acute cardiac injury may act as a marker of mortality risk. Given the unadjusted results of our meta-analysis, future research are warranted.

39. **Associations of hypertension with the severity and fatality of SARS-CoV-2 infection: A meta-analysis.** Zhang J, Wu J, Sun X, et al. *Epidemiol Infect*. 2020 May 28:1-19. doi: 10.1017/S095026882000117X.

https://www.cambridge.org/core/services/aop-cambridge-core/content/view/4116FAD7D866737099F976E7E7FAEB15/S095026882000117Xa.pdf/associations_of_hypertension_with_the_severity_and_fatality_of_sarscov2_infection_a_metaanalysis.pdf

Findings: Twelve publications with 2389 COVID-19 patients (674 severe cases) were included for the analysis of disease severity. The severity rate of COVID-19 in hypertensive patients was much higher than in non-hypertensive cases (37.58% vs 19.73%, pooled OR: 2.27; 95% CI: 1.80-2.86). The results showed that hypertensive patients carried a nearly 3.48-fold higher risk of

dying from COVID-19 (95% CI: 1.72-7.08). Therefore, our present results provided further evidence that hypertension could significantly increase the risks of severity and fatality of SARS-CoV-2 infection.

40. **Clinical impact of COVID-19 on patients with cancer (CCC19): a cohort study.** Kuderer NM et al. *Lancet* 2020 May 28. doi: [https://doi.org/10.1016/S0140-6736\(20\)31187-9](https://doi.org/10.1016/S0140-6736(20)31187-9)
[https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(20\)31187-9.pdf](https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(20)31187-9.pdf)
Findings: Among patients with cancer and COVID-19, 30-day all-cause mortality was high and associated with general risk factors and risk factors unique to patients with cancer. Longer follow-up is needed to better understand the effect of COVID-19 on outcomes in patients with cancer, including the ability to continue specific cancer treatments.
41. **Predictors for Severe COVID-19 Infection.** Bhargava A, Fukushima EA, Levine M, Zhao W, Tanveer F, Szpunar SM, Saravolatz L. *Clin Infect Dis*. 2020 May 30:ciaa674. doi: 10.1093/cid/ciaa674. <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciaa674/5848851>
Findings: Acute or pre-existing renal disease, supplemental oxygen at the time of hospitalization and initial CRP were independent predictors for the development of severe COVID-19 infections. Every 1 unit increase in CRP increased the risk of severe disease by 0.06%.
42. **Phenotypic characteristics and prognosis of inpatients with COVID-19 and diabetes: the CORONADO study.** Cariou B et al. *Diabetologia*. 2020 May 29:1-16. doi: 10.1007/s00125-020-05180-x. <https://link.springer.com/article/10.1007/s00125-020-05180-x>
Findings: In people with diabetes hospitalised for COVID-19, BMI, but not long-term glucose control, was positively and independently associated with tracheal intubation and/or death within 7 days.
43. **Estimation of RAAS-Inhibitor effect on the COVID-19 outcome: A Meta-analysis.** Pirola CJ, Sookoian S. *J Infect*. 2020 May 28:S0163-4453(20)30329-7. doi: 10.1016/j.jinf.2020.05.052. [https://www.journalofinfection.com/article/S0163-4453\(20\)30329-7/pdf](https://www.journalofinfection.com/article/S0163-4453(20)30329-7/pdf)
Findings: We included 16 studies that involved 24,676 COVID-19 patients, and we compared patients with critical (n = 4134) vs. non-critical (n = 20,542) outcomes. The overall assessment by estimating random effects shows that the use of ACEIs/ARBs is not associated with higher risk of in-hospital-death and/or severe illness among hypertensive patients with COVID-19 infection. On the contrary, effect estimate shows an overall protective effect of RAAS inhibitors/blockers. RAAS inhibitors might be associated with better COVID-19 prognosis.
44. **Applicability of the CURB-65 pneumonia severity score for outpatient treatment of COVID-19.** Nguyen Y, Corre F, Honsel V, et al. *J Infect*. 2020 May 28:S0163-4453(20)30330-3. doi: 10.1016/j.jinf.2020.05.049. [https://www.journalofinfection.com/article/S0163-4453\(20\)30330-3/pdf](https://www.journalofinfection.com/article/S0163-4453(20)30330-3/pdf)
Findings: The Infectious Diseases Society of America / American Thoracic Society and the British Thoracic Society guidelines suggest that patients with CURB-65 scores of 0–1 are at low risk of death and thus may be managed as outpatients. However, whether CURB-65 can be applicable

to COVID-19 patients for the decision outpatient treatment is still unknown. Our results showed that the CURB-65 is associated with an unfavourable outcome, and thus its application as a severity score for COVID-19 might be promising. However, while the majority of our patients would have been considered at low risk of 30-day mortality according to this severity score, more than 20% of them had a poor outcome. Our study suggests that the applicability of CURB-65 to guide the decision of inpatient or outpatient care is scarce, as it does not safely identify patients who could be managed as outpatients.

45. **Mortality and Advanced Support Requirement for Patients with Cancer With COVID-19: A Mathematical Dynamic Model for Latin America.** Ruiz-Patiño A, Arrieta O, Pino LE, et al. *JCO Glob Oncol.* 2020 May;6:752-760. doi: 10.1200/GO.20.00156.

<https://ascopubs.org/doi/pdfdirect/10.1200/GO.20.00156>

Findings: Cancer-related cases and deaths attributable to SARS-CoV-2 will put a great strain on health care systems in Latin America. Early implementation of interventions on the basis of data given by disease modeling could mitigate both infections and deaths among patients with cancer.

46. **Viral and host factors related to the clinical outcome of COVID-19.** Zhang X et al. *Nature* 2020 May 20; <https://doi.org/10.1038/s41586-020-2355-0>

<https://www.nature.com/articles/s41586-020-2355-0>

Findings: Here we analyzed the clinical, molecular and immunological data from 326 confirmed cases of COVID-19 in Shanghai. Genomic sequences of SARS-CoV-2 assembled from 112 quality samples together with sequences in the Global Initiative on Sharing All Influenza Data (GISAID) showed a stable evolution and suggested two major lineages with differential exposure history during the early phase of the outbreak in Wuhan. Nevertheless, they exhibited similar virulence and clinical outcomes. Lymphocytopenia, especially the reduced CD4+ and CD8+ T cell counts upon admission, was predictive of disease progression. High levels of IL-6 and IL-8 during treatment were observed in patients with severe or critical disease and correlated with decreased lymphocyte count. The determinants of disease severity seemed to stem mostly from host factors such as age, lymphocytopenia, and its associated cytokine storm, whereas viral genetic variation did not significantly affect the outcomes.

47. **A clinical risk score to identify patients with COVID-19 at high risk of critical care admission or death: an observational cohort study.** Galloway JB, Norton S, Barker RD, et al. *J Infect.* 2020 May 29;S0163-4453(20)30314-5. doi: 10.1016/j.jinf.2020.05.064.

<https://www.sciencedirect.com/science/article/pii/S0163445320303145>

Findings: Analyses included 1,157 patients. A risk score was developed incorporating twelve characteristics: age>40, male, non-white ethnicity, oxygen saturations<93%, radiological severity score>3, neutrophil count>8.0 x10⁹/L, CRP>40 mg/L, albumin<34 g/L, creatinine>100 μmol/L, diabetes mellitus, hypertension and chronic lung disease. Risk scores of 4 or higher corresponded to a 28-day cumulative incidence of critical care admission or death of 40.7% (95% CI: 37.1 to 44.4), versus 12.4% (95% CI: 8.2 to 16.7) for scores less than 4. Our study identified predictors of critical care admission and death in people admitted to hospital with

COVID-19. These predictors were incorporated into a risk score that will inform clinical care and stratify patients for clinical trials.

Therapeutics

- 48. Hydroxychloroquine or Chloroquine for Treatment or Prophylaxis of COVID-19: A Living Systematic Review.** Hernandez AV, Roman YM, Pasupuleti V, Barboza JJ, White CM. *Ann Intern Med.* 2020 May 27. doi: 10.7326/M20-2496. <https://www.acpjournals.org/doi/10.7326/M20-2496>

Findings: Four randomized controlled trials, 10 cohort studies, and 9 case series assessed treatment effects of the medications, but no studies evaluated prophylaxis. Evidence was conflicting and insufficient regarding the effect of hydroxychloroquine on such outcomes as all-cause mortality, progression to severe disease, clinical symptoms, and upper respiratory virologic clearance with antigen testing. Evidence on the benefits and harms of using hydroxychloroquine or chloroquine to treat COVID-19 is very weak and conflicting.
- 49. Remdesivir for 5 or 10 Days in Patients with Severe Covid-19.** Goldman JD, Lye DCB, Hui DS, Marks KM, Bruno R, Montejano R, Spinner CD, Galli M, Ahn MY, Nahass RG, Chen YS, SenGupta D, Hyland RH, Osinusi AO, Cao H, Blair C, Wei X, Gaggar A, Brainard DM, Towner WJ, Muñoz J, Mullane KM, Marty FM, Tashima KT, Diaz G, Subramanian A; GS-US-540-5773 Investigators. *N Engl J Med.* 2020 May 27. doi: 10.1056/NEJMoa2015301. <https://www.nejm.org/doi/10.1056/NEJMoa2015301>

Findings: In patients with severe Covid-19 not requiring mechanical ventilation, our trial did not show a significant difference between a 5-day course and a 10-day course of remdesivir. With no placebo control, however, the magnitude of benefit cannot be determined. (Funded by Gilead Sciences; GS-US-540-5773 ClinicalTrials.gov number, NCT04292899.).
- 50. Routine Venous Thromboembolism Prophylaxis May Be Inadequate in the Hypercoagulable State of Severe Coronavirus Disease 2019.** Maatman TK, Jalali F, Feizpour C, et al. *Crit Care Med.* 2020 May 27. doi: 10.1097/CCM.0000000000004466. https://journals.lww.com/ccmjournal/Abstract/9000/Routine_Venous_Thromboembolism_Prophylaxis_May_Be.95638.aspx

Findings: Data show that coronavirus disease 2019 results in a hypercoagulable state. Routine chemical venous thromboembolism prophylaxis may be inadequate in preventing venous thromboembolism in severe coronavirus disease 2019.
- 51. Decreased Mortality of COVID-19 with Renin-Angiotensin-Aldosterone System Inhibitors Therapy in Patients with Hypertension: A Meta-Analysis.** Guo X, Zhu Y, Hong Y. *Hypertension.* 2020 May 27. doi: 10.1161/HYPERTENSIONAHA.120.15572. <https://www.ahajournals.org/doi/10.1161/HYPERTENSIONAHA.120.15572>

Findings: We included 9 studies comprising 3936 patients with hypertension and COVID-19 infection. Compared with non-ACEI/ARB treatment, ACEI/ARB treatment was not associated with disease severity (OR 0.71, 95 % CI 0.46-1.08, P 0.11, I2 59%) but was related to lower mortality of COVID-19 in patients with hypertension (OR 0.57, 95 % CI 0.38-0.84, P 0.004, I2 0).

In summary, ACEI/ARB therapy did not aggravate disease severity of COVID-19. Besides, ACEI/ARB therapy can decrease the mortality of COVID-19. Current evidence suggested that RAAS inhibitors should be continued in COVID-19 patients with hypertension.

52. **Veno-venous Extracorporeal Membrane Oxygenation for Respiratory Failure in COVID-19 Patients: Early Experience from a Major Academic Medical Center in North America.** Asishana A Osho, Philicia Moonsamy, Kathryn A Hibbert, et al. *Ann Surg.* 2020 May 25. doi: 10.1097/SLA.0000000000004084.

<https://www.ahajournals.org/doi/pdf/10.1161/HYPERTENSIONAHA.120.15572>

Findings: This is the first case series describing VV ECMO outcomes in COVID-19 patients. During the first month of the COVID-19 outbreak in Massachusetts, 6 patients were placed on VV ECMO for refractory hypoxemic respiratory failure. At the time of this report, 83% (5/6) of the patients are still alive with 1 death on ECMO, attributed to hemorrhagic stroke. 67% of patients (4/6) have been successfully decannulated, including 2 that have been successfully extubated and one who was discharged from the hospital. The median duration of VV ECMO therapy for patients who have been decannulated is 12 days (4-18 days). Our initial data suggest that VV ECMO can be successfully utilized in appropriately selected COVID-19 patients with advanced respiratory failure.

53. **Nutrition Therapy in Critically Ill Patients with Coronavirus Disease (COVID-19).** Martindale R, Patel JJ, Taylor B, Arabi YM, Warren M, McClave SA. *JPEN J Parenter Enteral Nutr.* 2020 May 27. doi: 10.1002/jpen.1930. <https://onlinelibrary.wiley.com/doi/abs/10.1002/jpen.1930>

Findings: Delivery of nutritional therapy must include strategies to reduce exposure and spread of the disease by providing clustered care, adequate protection of healthcare providers, and preservation of personal protective equipment. Enteral nutrition (EN) should be initiated early after admission to the intensive care unit (ICU) using a standard isosmolar polymeric formula, starting at trophic doses and advancing as tolerated while monitoring for gastrointestinal intolerance, hemodynamic instability, and metabolic derangements. Intra-gastric EN may be provided safely, even with use of prone positioning and extracorporeal membrane oxygenation. Clinicians, though, should have a lower threshold for switching to parenteral nutrition in cases of intolerance, high risk of aspiration, or escalating vasopressor support. While data extrapolated from experience in Acute Respiratory Distress Syndrome (ARDS) warrants use of fiber additives and probiotic organisms. The lack of demonstrated benefit precludes a recommendation for micronutrient supplementation. Practices which increase exposure or contamination of equipment, such as use of gastric residual volumes as a monitor, indirect calorimetry to calculate requirements, endoscopy or fluoroscopy to achieve enteral access, or transport out of the ICU for additional imaging should be avoided. At all times, strategies for nutritional therapy need to be assessed on a risk/benefit basis, paying attention to risk for both the patient and the healthcare provider.

54. **Clinical impact of pre-admission antithrombotic therapy in hospitalized patients with COVID-19: a multicenter observational study.** Russo V, Di Maio M, Attena E, et al. *Pharmacol Res.* 2020 May 28:104965. doi: 10.1016/j.phrs.2020.104965.

<https://www.sciencedirect.com/science/article/pii/S1043661820312731?via%3Dihub>

Findings: Pre-admission antithrombotic therapy, both antiplatelet and anticoagulant, does not seem to show a protective effect in severe forms of COVID-19 with ARDS at presentation and rapidly evolving toward death.

55. **An Updated Systematic Review of the Therapeutic Role of Hydroxychloroquine in Coronavirus Disease-19 (COVID-19).** Das S, Bhowmick S, Tiwari S, Sen S. *Clin Drug Investig.* 2020 May 28:1-11. doi: 10.1007/s40261-020-00927-1.

<https://link.springer.com/article/10.1007%2Fs40261-020-00927-1>

Findings: The results of efficacy and safety of HCQ in COVID-19, as obtained from the clinical studies, are not satisfactory, although many of these studies had major methodological limitations. Stronger evidence from well-designed robust randomized clinical trials is required before conclusively determining the role of HCQ in the treatment of COVID-19. Clinical prudence is required in advocating HCQ as a therapeutic armamentarium in COVID-19.

56. **Co-infections in people with COVID-19: a systematic review and meta-analysis.** Lansbury L, Lim B, Baskaran V, Lim WS. *J Infect.* 2020 May 27:S0163-4453(20)30323-6. doi: 10.1016/j.jinf.2020.05.046.

[https://www.journalofinfection.com/article/S0163-4453\(20\)30323-6/pdf](https://www.journalofinfection.com/article/S0163-4453(20)30323-6/pdf)

Findings: A low proportion of COVID-19 patients have a bacterial co-infection; less than in previous influenza pandemics. These findings do not support the routine use of antibiotics in the management of confirmed COVID-19 infection.

57. **Treatment of COVID-19 Patients with Convalescent Plasma.** Salazar E et al. *Am J Pathol.* 2020 May 27:S0002-9440(20)30257-1. doi: 10.1016/j.ajpath.2020.05.014.

[https://ajp.amjpathol.org/article/S0002-9440\(20\)30257-1/pdf](https://ajp.amjpathol.org/article/S0002-9440(20)30257-1/pdf)

Findings: Our data indicate that administration of convalescent plasma is a safe treatment option for those with severe COVID-19 disease.

58. **Potential new treatment strategies for COVID-19: is there a role for bromhexine as add-on therapy?** Depfenhart M, de Villiers D, Lemperle G, Meyer M, Di Somma S. *Intern Emerg Med.* 2020 May 26:1-12. doi: 10.1007/s11739-020-02383-3.

<https://link.springer.com/article/10.1007%2Fs11739-020-02383-3>

Findings: Using bromhexine at a dosage that selectively inhibits TMPRSS2 and, in so doing, inhibits TMPRSS2-specific viral entry is likely to be effective against SARS-CoV-2. We propose the use of bromhexine as a prophylactic and treatment. We encourage the scientific community to assess bromhexine clinically as a prophylactic and curative treatment. If proven to be effective, this would allow a rapid, accessible, and cost-effective application worldwide.

59. **The association between treatment with heparin and survival in patients with Covid-19.**

Ayerbe L, Risco C, Ayis S. *J Thromb Thrombolysis.* 2020 May 31. doi: 10.1007/s11239-020-02162-z. <https://link.springer.com/article/10.1007/s11239-020-02162-z>

Findings: This study investigates the association between the treatment with heparin and mortality in patients admitted with Covid-19. Heparin had been used in 1734 patients. Heparin was associated with lower mortality when the model was adjusted for age and gender, with OR

(95% CI) 0.55 (0.37-0.82) $p = 0.003$. This association remained significant when saturation of oxygen $< 90\%$, and temperature $> 37^\circ\text{C}$ were added to the model with OR 0.54 (0.36-0.82) $p = 0.003$, and also when all the other drugs were included as covariates OR 0.42 (0.26-0.66) $p < 0.001$. The association between heparin and lower mortality observed in this study can be acknowledged by clinicians in hospitals and in the community. Randomized controlled trials to assess the causal effects of heparin in different therapeutic regimes are required.

Transmission / Infection Control

60. **Assessment of the Qualitative Fit Test and Quantitative Single-Pass Filtration Efficiency of Disposable N95 Masks Following Gamma Irradiation.** Cramer A, Tian E, Galanek M, et al. *JAMA Netw Open.* 2020;3(5):e209961. doi:10.1001/jamanetworkopen.2020.9961
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2766200>
Findings: Gamma irradiation has certain logistical advantages over other sterilization methods but there is a concern that radiation may damage the mask by cross-linking polymers within it and make them brittle. Ionizing radiation can disrupt the electrostatic charge distribution in the electret material of the mask and reduce its filtration efficiency against submicron particles.
61. **Maximum Daily Temperature, Precipitation, Ultra-Violet Light and Rates of Transmission of SARS-CoV-2 in the United States.** Sehra ST, Salciccioli JD, Wiebe DJ, Fundin S, Baker JF. *Clin Infect Dis.* 2020 May 30:ciaa681. doi: 10.1093/cid/ciaa681.
<https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciaa681/5849063>
Findings: The incidence of disease declines with increasing temperature up until 52°F and is lower at warmer versus cooler temperatures. However, the association between temperature and transmission is small and transmission is likely to remain high at warmer temperatures.
62. **Detection of air and surface contamination by SARS-CoV-2 in hospital rooms of infected patients.** Chia PY et al. *Nat Commun.* 2020 May 29;11(1):2800. doi: 10.1038/s41467-020-16670-2. <https://www.nature.com/articles/s41467-020-16670-2>
Findings: Understanding the particle size distribution in the air and patterns of environmental contamination of SARS-CoV-2 is essential for infection prevention policies. Here we screen surface and air samples from hospital rooms of COVID-19 patients for SARS-CoV-2 RNA. Environmental sampling is conducted in three airborne infection isolation rooms (AIIRs) in the ICU and 27 AIIRs in the general ward. 245 surface samples are collected. 56.7% of rooms have at least one environmental surface contaminated. High touch surface contamination is shown in ten (66.7%) out of 15 patients in the first week of illness, and three (20%) beyond the first week of illness ($p = 0.01$, χ^2 test). Air sampling is performed in three of the 27 AIIRs in the general ward, and detects SARS-CoV-2 PCR-positive particles of sizes $>4\ \mu\text{m}$ and $1-4\ \mu\text{m}$ in two rooms, despite these rooms having 12 air changes per hour. This warrants further study of the airborne transmission potential of SARS-CoV-2.
63. **Providing evidence on the ongoing health care workers' mask debate.** Tsilingiris D, Papatheodoridi M, Kapelios CJ. *Intern Emerg Med.* 2020 May 29:1-5. doi: 10.1007/s11739-020-02382-4. <https://link.springer.com/article/10.1007%2Fs11739-020-02382-4>

Findings: The scarcity of facemasks, particularly N95 respirators, combined with the lack of solid data to address the suitability of each mask type for adequate health care worker protection have caused turmoil among HCWs. Current recommendations suggest mask usage solely during HCW contact with Covid-19 patients, namely plain medical mask for low-risk contacts and N95 for aerosol generating procedures. The distinction regarding the escalation of mask complexity depending on contact type is nevertheless based on plausible theoretical assumptions rather than hard evidence of a clear benefit. Conversely, we suggest that at least a plain mask should be used during all HCWs' contacts in healthcare facilities which constitute a highly probable but often overlooked means of SARS-CoV-2 transmission among HCWs.

64. **Evidence for decontamination of single-use filtering facepiece respirators.** Polkinghorne A, Branley J. *J Hosp Infect.* 2020 May 27:S0195-6701(20)30263-2. doi: 10.1016/j.jhin.2020.05.032. [https://www.journalofhospitalinfection.com/article/S0195-6701\(20\)30263-2/pdf](https://www.journalofhospitalinfection.com/article/S0195-6701(20)30263-2/pdf)

Findings: Decontamination of FFRs has been posited as one solution to support the re-use of FFRs with a growing body of literature over the last 10+ years beginning to examine both the efficacy of disinfection of contaminated FFRs but also the impact of the decontamination process on the FFR's performance. Physical and chemical methods of decontamination have been tested for treatment of FFRs with ultraviolet germicidal irradiation, sterilization by steam, ethylene oxide and vaporous hydrogen peroxide, demonstrating the most promising results thus far. Many of these methods utilize existing equipment that may already be available in hospitals and could be re-purposed for FFR decontamination. Importantly, some methods may also be replicated on household equipment, broadening the utility of FFR decontamination across a range of healthcare settings. Utilizing techniques to experimentally contaminate FFRs with a range of microorganisms, most decontamination methods appear to reduce the risk of the mask as a source of infection to the wearer and others to negligible levels. The performance of the filter, especially the efficiency of particle penetration following treatment, varied greatly depending on the processing method as well as the model of the filter itself, however. Urgent regulatory body-supported research is required to endorse the routine decontamination of FFRs. In emergency settings, these methods should nevertheless be carefully considered as one strategy to address potential shortfalls in supplies of FFRs for healthcare workers.

65. **Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis.** Chu DK et al. *Lancet* 2020 Jun 1. doi: [https://doi.org/10.1016/S0140-6736\(20\)31142-9](https://doi.org/10.1016/S0140-6736(20)31142-9) [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)31142-9/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31142-9/fulltext)

Findings: This systematic review and meta-analysis support physical distancing of 1 m or more and provide quantitative estimates for models and contact tracing to inform policy. Optimum use of face masks, respirators, and eye protection in public and health-care settings should be informed by these findings and contextual factors. Robust randomised trials are needed to better inform the evidence for these interventions, but this systematic appraisal of currently best available evidence might inform interim guidance.

66. **Decontamination of Surgical Face Masks and N95 Respirators by Dry Heat Pasteurization for One Hour at 70°C.** Xiang Y, Song Q, Gu W. *Am J Infect Control.* 2020 May 29:S0196-

6553(20)30343-6. doi: 10.1016/j.ajic.2020.05.026. [https://www.ajicjournal.org/article/S0196-6553\(20\)30343-6/fulltext](https://www.ajicjournal.org/article/S0196-6553(20)30343-6/fulltext)

Findings: Dry heat at both 60°C and 70°C for one hour could successfully kill six species of respiratory bacteria and one fungi species, and inactivate the H1N1 indicator virus. After being heated at 70°C for 1 h, 2 h, and 3 h, the N95 respirators and surgical face masks showed no changes in their shape and components. The filtering efficiency of bacterial aerosol for N95 respirators were 98%, 98%, and 97% after being heated for 1 h, 2 h, and 3 h, respectively, all of which were over the 95% efficiency required and similar to the value before being heated (99%). The filtering efficiency for surgical face masks was 97%, 97%, and 96% for 1 h, 2 h, and 3 h of heating, respectively, all of which were also similar to the value before being heated (97%). This method can be used at home and can resolve the current shortage of masks.

67. **Impact of Anti-TNF and Thiopurines medications on the development of COVID-19 in patients with inflammatory bowel disease: A Nationwide VA cohort study.** Khan N, Patel D, Xie D, Lewis J, Trivedi C, Yang YX. *Gastroenterology*. 2020 May 29:S0016-5085(20)34737-5. doi: 10.1053/j.gastro.2020.05.065. [https://www.gastrojournal.org/article/S0016-5085\(20\)34737-5/pdf](https://www.gastrojournal.org/article/S0016-5085(20)34737-5/pdf)

Findings: Inflammatory bowel disease (IBD) is primarily treated by immunosuppressive medications which can put patients at risk of developing infectious complications including viral infections. Therefore, it is important to evaluate the risk factors of COVID-19 in the IBD population, especially the impact of immunosuppression on the incidence. There are limited data available in the current literature on this topic.

Women & Children

68. **Symptoms and Critical Illness Among Obstetric Patients With Coronavirus Disease 2019 (COVID-19) Infection.** Andrikopoulou M, Madden N, Wen T, et al. *Obstet Gynecol*. 2020 May 27. doi: 10.1097/AOG.0000000000003996. https://journals.lww.com/greenjournal/Abstract/9000/Symptoms_and_Critical_Illness_Among_Obstetric.97341.aspx

Findings: One in five pregnant women who contracted COVID-19 infection developed moderate or severe disease, including a small proportion with prolonged critical illness who received ICU or step-down-level care.

69. **Multisystem Inflammatory Syndrome in Children during the COVID-19 pandemic: a case series.** Chiotos K, Bassiri H, Behrens EM, et al. *J Pediatric Infect Dis Soc*. 2020 May 28:piaa069. doi: 10.1093/jpids/piaa069. <https://academic.oup.com/jpids/advance-article/doi/10.1093/jpids/piaa069/5848127>

Findings: We present a series of six critically ill children with Multisystem Inflammatory Syndrome in Children (MIS-C). Key findings of this syndrome include fever, diarrhea, shock, and variable presence of rash, conjunctivitis, extremity edema, and mucous membrane changes.

70. **Laboratory Abnormalities in Children with Mild and Severe Coronavirus Disease 2019 (COVID-19): a pooled analysis and review.** Michael Henry B, Benoit SW, Helena Santos de Oliveira M,

Chin Hsieh W, Benoit J, Ballout RA, Plebani M, Lippi G. *Clin Biochem*. 2020 May 27:S0009-9120(20)30331-3. doi: 10.1016/j.clinbiochem.2020.05.012.

<https://www.sciencedirect.com/science/article/pii/S0009912020303313?via%3Dihub>

Findings: We identified 24 eligible studies, including a total of 624 pediatric cases with laboratory-confirmed COVID-19, which report data on 27 different biomarkers. We then performed a meta-analysis to calculate the pooled prevalence estimates (PPE) for these laboratory abnormalities in mild COVID-19. Based on data obtained from early COVID-19 studies, leukocyte indices in children appear inconsistent, differing from those reported in adults that highlight specific leukocyte trends. This brings into question the utility and reliability of such parameters in monitoring disease severity in the pediatric population. Instead, we suggest physicians to serially monitor CRP, PCT, and LDH to track the course of illness in hospitalized children. Finally, elevated CK-MB in mild pediatric COVID-19 cases is indicative of possible cardiac injury. This highlights the importance of monitoring cardiac biomarkers in hospitalized patients and the need for further investigation of markers such as cardiac troponin in future studies.

71. Preeclampsia-like syndrome induced by severe COVID-19: a prospective observational study.

Mendoza M, Garcia-Ruiz I, Maiz N, et al. *BJOG*. 2020 Jun 1. doi: 10.1111/1471-0528.16339.

<https://obgyn.onlinelibrary.wiley.com/doi/10.1111/1471-0528.16339>

Findings: Pregnant women with severe COVID-19 can develop a PE-like syndrome that might be distinguished from actual PE by sFlt-1/PIGF, LDH and UtAPI assessment. Health care providers should be aware of its existence and monitor pregnancies with suspected preeclampsia with caution.

72. Characteristics of Hospitalized Pediatric COVID-19 Cases - Chicago, Illinois, March - April 2020.

Mannheim J, Gretsch S, Layden JE, Fricchione MJ. *J Pediatric Infect Dis Soc*. 2020 Jun 1:piaa070. doi: 10.1093/jpids/piaa070.

<https://academic.oup.com/jpids/advance-article/doi/10.1093/jpids/piaa070/5849922>

Findings: Enhanced case investigation of hospitalized patients revealed that underlying comorbidities and co-infection might have contributed to severe disease. Given frequency of household transmission, healthcare providers should consider alternative dispositional planning for affected families of children

73. Pediatric Modification of the Medically Necessary, Time-Sensitive Scoring System for Operating Room Procedure Prioritization During the COVID-19 Pandemic. Slidell MB, Kandel

JJ, Prachand V, et al. *J Am Coll Surg*. 2020 May 27:S1072-7515(20)30430-0. doi: 10.1016/j.jamcollsurg.2020.05.015.

[https://www.journalacs.org/article/S1072-7515\(20\)30430-0/pdf](https://www.journalacs.org/article/S1072-7515(20)30430-0/pdf)

Findings: This Pediatric MeNTS (pMeNTS) scoring system was applied to 101 cases both performed and deferred between March 23rd and April 19th, 2020, at The University of Chicago Comer Children's Hospital. The pMeNTS scores provides a safe, equitable, transparent, and ethical strategy to prioritize children's surgical procedures.

GUIDELINES & CONSENSUS STATEMENTS

[Extracorporeal Blood Purification and Organ Support in the Critically Ill Patient during COVID-19 Pandemic: Expert Review and Recommendation.](#) Ronco C, Bagshaw SM, Bellomo R, et al. *Blood Purif.* 2020 May 26;1-11. doi: 10.1159/000508125.

[COVID-19: Recommendations for regional anesthesia.](#) Herman JA, Urits I, Kaye AD, et al. *J Clin Anesth.* 2020 May 20;65:109885. doi: 10.1016/j.jclinane.2020.109885.

[Scientific and Standardization Committee Communication: Clinical Guidance on the Diagnosis, Prevention and Treatment of Venous Thromboembolism in Hospitalized Patients with COVID-19.](#) Subcommittee on Perioperative, Critical Care Thrombosis, Haemostasis of the Scientific, Standardization Committee of the International Society on Thrombosis, Haemostasis+. *J Thromb Haemost.* 2020 May 27. doi: 10.1111/jth.14929.

[Position Paper on the Preparation of Immune Plasma to Be Used in the Treatment of Patients With COVID-19.](#) Italian Society for Transfusion Medicine and Immunohaematology (SIMITI) and the Italian Society for Haemapheresis and Cell Manipulation (SIdEM). *Blood Transfus.* 2020 May;18(3):163-166. doi: 10.2450/2020.0124-20.

[International Guidelines And Recommendations For Surgery During Covid-19 Pandemic: A Systematic Review.](#) Lucia Moletta, Elisa Sefora Pierobon, Giovanni Capovilla, et al. *Int J Surg.* 2020 May 23;S1743-9191(20)30444-1. doi: 10.1016/j.ijisu.2020.05.061.

[Management of Heart Failure Patients with COVID-19. A Joint Position Paper of the Chinese Heart Failure Association & National Heart Failure Committee and the Heart Failure Association of the European Society of Cardiology.](#) Zhang Y, Stewart Coats AJ, Zheng Z, Adamo M, Ambrosio G, Anker SD, Butler J, Xu D, Mao J, Khan MS, Bai L, Mebazaa A, Ponikowski P, Tang Q, Ruschitzka F, Seferovic P, Tschöpe C, Zhang S, Gao C, Zhou S, Senni M, Zhang J, Metra M. *Eur J Heart Fail.* 2020 May 28. doi: 10.1002/ejhf.1915.

[The Stanford Hall consensus statement for post-COVID-19 rehabilitation.](#) Barker-Davies RM, O'Sullivan O, Senaratne KPP, et al. *Br J Sports Med.* 2020 May 31;bjssports-2020-102596. doi: 10.1136/bjssports-2020-102596.

FDA / CDC / NIH/ WHO Updates

CDC - [Interim Guidelines for COVID-19 Antibody Testing](#)

CDC - [Interim U.S. Guidance for Risk Assessment and Work Restrictions for Healthcare Personnel with Potential Exposure to COVID-19](#)

CDC - [COVID-19 Employer Information for Reopening Office Buildings](#)

TJC - [Preventing Nosocomial COVID-19 Infections as Organizations Resume Regular Care Delivery](#)

WHO - [Maintaining essential health services: operational guidance for the COVID-19 context](#)

News Release

[Gilead Announces Results From Phase 3 Trial of Remdesivir in Patients With Moderate COVID-19](#)

Commentary

["Is It Safe for Me to Go to Work?" Risk Stratification for Workers during the Covid-19 Pandemic.](#)

Larochelle MR. *N Engl J Med*. 2020 May 26. doi: 10.1056/NEJMp2013413.

[Adverse Consequences of Rushing a SARS-CoV-2 Vaccine: Implications for Public Trust.](#) Brit Trogen, David Oshinsky, Arthur Caplan. *JAMA*. 2020 May 26. doi: 10.1001/jama.2020.8917.

[The epic battle against coronavirus misinformation and conspiracy theories.](#) Philip Ball & Amy Maxmen. *Nature* May 27, 2020.

[Opening Hospitals to More Patients During the COVID-19 Pandemic-Making It Safe and Making It Feel Safe.](#) Asch DA. *JAMA Intern Med*. 2020 May 27. doi: 10.1001/jamainternmed.2020.2626.

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