Providence

COVID-19 Resource Desk

#8 | 6.10.2020 to 6.16.2020

Prepared by System Library Services

New Research

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

Retracted Articles - see Retraction Watch

Basic Science / Virology / Pre-clinical

1. **A Large Number of COVID-19 Interventional Clinical Trials Were Registered Soon After the Pandemic Onset: A Descriptive Analysis.** Nasrallah AA, Farran SH, Nasrallah ZA, et al. *J Clin Epidemiol.* 2020 Jun 8;S0895-4356(20)30441-8. doi: 10.1016/j.jclinepi.2020.06.005. https://www.jclinepi.com/article/S0895-4356(20)30441-8/pdf
   Findings: We searched the World Health Organization (WHO)'s International Clinical Trials Registry Platform (ICTRP) on May 15, 2020 and identified 1,308 eligible registered trials. The majority of trials were initially registered with ClinicalTrials.gov (n= 703; 53.7%) and the Chinese Clinical Trial Registry (ChiCTR) (n= 291; 22.2%). While our findings suggest an appropriate initial response by the research community, the real challenge will be to get these trials completed, published, and translated into practice and policy.

2. **Clinical Benefit of Remdesivir in Rhesus Macaques Infected With SARS-CoV-2.** Williamson BN, Feldmann F, Schwarz B, et al. *Nature*. 2020 Jun 9. doi: 10.1038/s41586-020-2423-5. https://www.nature.com/articles/s41586-020-2423-5
   Findings: Although the rhesus macaque model does not represent the severe disease observed in a proportion of COVID-19 patients, our data support early remdesivir treatment initiation in COVID-19 patients to prevent progression to pneumonia.

3. **The D614G mutation in the SARS-CoV-2 spike protein reduces S1 shedding and increases infectivity.** Zhang L, Jackson CB, Mou H, et al. *PREPRINT. Scripps Research*. https://www.scripps.edu/news-and-events/press-room/2020/20200611-choe-farzan-sars-cov-2-spike-protein.html
   Findings: SARS coronavirus 2 isolates encoding a D614G mutation in the viral spike (S) protein predominate over time in locales where it is found, implying that this change enhances viral transmission. We therefore compared the functional properties of the S proteins with aspartic acid (SD614) and glycine (SG614) at residue 614. We observed that retroviruses pseudotyped with SG614 infected ACE2- expressing cells markedly more efficiently than those with SD614. This greater infectivity was correlated with less S1 shedding and greater incorporation of the S protein into the pseudovirion. Similar results were obtained using the virus-like particles

produced with SARS-CoV-2 M, N, E, and S proteins. However, SG614 did not bind ACE2 more efficiently than SD614, and the pseudoviruses containing these S proteins were neutralized with comparable efficiencies by convalescent plasma. These results show SG614 is more stable than SD614, consistent with epidemiological data suggesting that viruses with SG614 transmit more efficiently.

Clinical Syndrome

4. **Cardiac MRI of Children with Multisystem Inflammatory Syndrome (MIS-C) Associated With COVID-19: Case Series.** Blondiaux E, Parisot P, Redheuil A, et al. *Radiology.* 2020 Jun 9;202288. doi: 10.1148/radiol.2020202288. https://pubs.rsna.org/doi/10.1148/radiol.2020202288
Findings: In this series, the most common findings were age > 5 years, increased levels of brain natriuretic peptide and troponin I, echocardiography changes with transient systolic dysfunction associated with cardiac MRI signs of diffuse myocardial edema and hyperemia without evidence of focal myocardial necrosis or replacement fibrosis. All patients recovered rapidly, with no evidence of coronary artery dilatation or aneurysm. The pathophysiology of MIS-C is still unexplained, but our cardiac MRI findings support the hypothesis of an immune response to an antigen rather than a direct complication secondary to SARS-CoV-2 infection.

5. **Epidemiology, clinical course, and outcomes of critically ill adults with COVID-19 in New York City: a prospective cohort study.** Cummings MJ et al. *Lancet* 2020;395:1763–70. doi: https://doi.org/10.1016/ S0140-6736(20)31189-2
https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(20)31189-2.pdf
Findings: Critical illness among patients hospitalised with COVID-19 in New York City is common and associated with a high frequency of invasive mechanical ventilation, extrapulmonary organ dysfunction, and substantial in-hospital mortality.

6. **Prevalence of Gastrointestinal Symptoms and Fecal Viral Shedding in Patients With Coronavirus Disease 2019. A Systematic Review and Meta-analysis.** Parasa S, Desai M, Chandrasekar VT, et al. *JAMA Netw Open*. 2020;3(6):e2011335. doi:10.1001/jamanetworkopen.2020.11335
https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2767009
Findings: These suggest that that 12% of patients with COVID-19 will manifest GI symptoms; however, SAR-CoV-2 shedding was observed in 40.5% of patients with confirmed SARS-CoV-2 infection. This highlights the need to better understand what measures are needed to prevent further spread of this highly contagious pathogen.

Diagnostics & Screening

7. **Hospital-Wide SARS-CoV-2 Antibody Screening in 3056 Staff in a Tertiary Center in Belgium.** Steensels D, Oris E, Coninx L, et al. *JAMA*. June 15, 2020. doi:10.1001/jama.2020.11160
https://jamanetwork.com/journals/jama/fullarticle/2767382?resultClick=1
Findings: In this hospital-wide screening study for SARS-CoV-2 antibodies among hospital staff, neither being directly involved in clinical care nor working in a COVID-19 unit increased the

odds of being seropositive, but having a suspected COVID-19 household contact did. The high availability of PPE, high standards of infection prevention, and polymerase chain reaction screening in symptomatic staff, coupled with contact tracing and quarantine, might explain a relatively low seroprevalence. Quick screening of large cohorts is important to control the pandemic. Hospital-wide antibody screening for SARS-CoV-2 can help monitor transmission dynamics and evaluate infection control policies.

Epidemiology & Public Health

8. **COVID-19: the great unequaliser.** Devakumar D, Bhopal SS, Shannon G. J Roy Soc Med 2020 Jun 10. doi: https://doi.org/10.1177/0141076820925434
https://journals.sagepub.com/doi/full/10.1177/0141076820925434
COVID-19 infection can lead to devastating consequences for individuals, families and wider society. But the impact on individuals is not equal. In an age of populist and divisive movements around the world, the outbreak has been racialised, hitting minority and marginalised communities the hardest.

9. **Prevalence of Hospital PCR-confirmed COVID-19 Cases in Patients with Chronic Inflammatory and Autoimmune Rheumatic Diseases.** Pablos JL, Abasolo L, Alvaro-Gracia JM, et al. *Ann Rheum Dis*. 2020 Jun 12;annrheumdis-2020-217763. doi: 10.1136/annrheumdis-2020-217763.
https://ard.bmj.com/content/early/2020/06/12/annrheumdis-2020-217763
Findings: Patients with AI/IMID show a variable risk of hospital-diagnosed COVID-19. Interplay of ageing, therapies and disease-specific factors seem to contribute. These data provide a basis to improve preventive recommendations to rheumatic patients and to analyse the specific factors involved in COVID-19 susceptibility.

10. **Natural History of Asymptomatic SARS-CoV-2 Infection.** Sakurai A, Sasaki T, Kato S, et al. *N Engl J Med*. 2020 Jun 12. doi: 10.1056/NEJMc2013020.
https://www.nejm.org/doi/full/10.1056/NEJMc2013020
Findings: Data from passengers on the Diamond Princess cruise ship. In this cohort, the majority of asymptomatically infected persons remained asymptomatic throughout the course of the infection. The time to the resolution of infection increased with increasing age.

11. **Age-dependent effects in the transmission and control of COVID-19 epidemics.** Davies, N.G., Klepac, P., Liu, Y. et al. *Nat Med* (2020). https://doi.org/10.1038/s41591-020-0962-9
https://www.nature.com/articles/s41591-020-0962-9#Abs1
Findings: The COVID-19 pandemic has shown a markedly low proportion of cases among children. Age disparities in observed cases could be explained by children having lower susceptibility to infection, lower propensity to show clinical symptoms or both. We evaluate these possibilities by fitting an age-structured mathematical model to epidemic data from China, Italy, Japan, Singapore, Canada and South Korea. We estimate that susceptibility to infection in individuals under 20 years of age is approximately half that of adults aged over 20 years, and that clinical symptoms manifest in 21% of infections in 10- to 19-year-olds, rising to 69% of infections in people aged over 70 years. Without effective control measures, regions

with relatively older populations could see disproportionally more cases of COVID-19, particularly in the later stages of an unmitigated epidemic.

12. **Coronavirus Disease 2019 Case Surveillance — United States, January 22–May 30, 2020.** Stokes EK, Zambrano LD, Anderson KN, et al. *MMWR Morb Mortal Wkly Rep*. ePub: 15 June 2020. DOI: http://dx.doi.org/10.15585/mmwr.mm6924e2 https://www.cdc.gov/mmwr/volumes/69/wr/mm6924e2.htm?s_cid=mm6924e2_w
Findings: As of May 30, 2020, among COVID-19 cases, the most common underlying health conditions were cardiovascular disease (32%), diabetes (30%), and chronic lung disease (18%). Hospitalizations were six times higher and deaths 12 times higher among those with reported underlying conditions compared with those with none reported.

Healthcare Delivery & Healthcare Providers

13. **Re-envisioning Discharge Planning and Expanding Post-Acute Care Capacity During a Pandemic.** Shapiro A, O'Toole N, Tinling-Solages D, et al. *NEJM Catalyst.* June 8 2020. https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0216
Findings: Much attention to Covid-19–related care, appropriately, is focused on establishing community-based infection-prevention tactics and addressing hospital-based intensive care needs for patients. At New York-Presbyterian, leadership also developed and implemented a multipronged approach to deal with the post-discharge care for its coronavirus patients through planning and collaboration.

14. **Kaiser Permanente's System Capabilities to Suppress Covid-19.** Parodi S, Choucair B, Young S, et al. *NEJM Catalyst.* June 9 2020. https://catalyst.nejm.org/doi/full/10.1056/cat.20.0187
Findings: KP is developing eight capabilities aimed at suppressing the novel coronavirus that include robust testing, telehealth, and contact tracing, partnerships with advocacy groups, planning for future surges, risk modeling to prioritize deferred care, and clinical research.

15. **Resilience Strategies to Manage Psychological Distress Amongst Healthcare Workers During the COVID-19 Pandemic: A Narrative Review.** Heath C, Sommerfield A, von Ungern-Sternberg BS. *Anaesthesia*. 2020 Jun 13. doi: 10.1111/anae.15180. https://onlinelibrary.wiley.com/doi/abs/10.1111/anae.15180
Findings: The purpose of this review is to review available literature on strategies for minimising the psychological impact of the COVID-19 pandemic on clinicians and to identify proactive holistic approaches which may be beneficial for healthcare workers both for the current crisis and into the future.

16. **A Framework for Identifying and Mitigating the Equity Harms of COVID-19 Policy Interventions.** Glover RE, van Schalkwyk MC, Akl EA, et al. *J Clin Epidemiol.* 2020 Jun 8;S0895-4356(20)30597-7. doi: 10.1016/j.jclinepi.2020.06.004. https://www.jclinepi.com/article/S0895-4356(20)30597-7/pdf
Findings: COVID-19 policy interventions can generate or exacerbate interactive and multiplicative equity harms. Applying our framework can help in three ways: (1) identifying

areas where a policy intervention may generate inequitable adverse effects; (2) mitigating policy and practice interventions by facilitating the systematic examination of relevant evidence; and (3) planning for lifting COVID-19 lockdowns and policy interventions around the world.

17. **Impact of the COVID-19 Pandemic on Emergency Department Visits - United States, January 1, 2019-May 30, 2020.** Hartnett KP, Kite-Powell A, DeVies J, et al. *MMWR Morb Mortal Wkly Rep*. 2020 Jun 12;69(23):699-704. doi: 10.15585/mmwr.mm6923e1. https://www.cdc.gov/mmwr/volumes/69/wr/mm6923e1.htm
Findings: To quantify the effect of COVID-19 on U.S. ED visits, CDC compared the volume of ED visits during four weeks early in the pandemic March 29-April 25, 2020 to that during March 31-April 27, 2019. During the early pandemic period, the total number of U.S. ED visits was 42% lower than during the same period a year earlier, with the largest declines in visits in persons aged ≤14 years, females, and the Northeast region.

18. **Webside Manner during the COVID-19 Pandemic: Maintaining Human Connection during Virtual Visits.** Chua IS, Jackson V, Kamdar M, et al. *J Palliat Med*. 2020 Jun 11. doi: 10.1089/jpm.2020.0298. https://www.liebertpub.com/doi/full/10.1089/jpm.2020.0298
Findings: The key elements and components of webside manner skills are proper set up, acquainting the participant, maintaining conversation rhythm, responding to emotion, and closing the visit. Other considerations that may require conversion to phone visits include persistent technical difficulties, lack of prerequisite technology to conduct virtual visits, patients who are too ill to participate, or who find virtual visits too technically challenging. Similar to bedside manner, possessing nuanced verbal and nonverbal webside manner skills is essential to conducting serious illness conversations during virtual visits.

Prognosis

19. **Individualizing Risk Prediction for Positive COVID-19 Testing: Results From 11,672 Patients.** Jehi L, Ji X, Milinovich A, et al. *Chest*. 2020 Jun 10;S0012-3692(20)31654-8. doi: 10.1016/j.chest.2020.05.580. https://journal.chestnet.org/article/S0012-3692(20)31654-8/pdf
Findings: Prediction of a COVID-19 (+) test is possible and could help direct healthcare resources. We demonstrate relevance of age, race, gender, and socioeconomic characteristics in COVID-19-susceptibility and suggest a potential modifying role of certain common vaccinations and drugs identified in drug-repurposing studies.

20. **Factors Associated with Surgical Mortality and Complications Among Patients With and Without Coronavirus Disease 2019 (COVID-19) in Italy.** Doglietto F, Vezzoli M, Gheza F, et al. *JAMA Surg.* 2020 Jun 12. doi: 10.1001/jamasurg.2020.2713. https://jamanetwork.com/journals/jamasurgery/fullarticle/2767370
Findings: In this matched cohort study, surgical mortality and complications were higher in patients with COVID-19 compared with patients without COVID-19. These data suggest that, whenever possible, surgery should be postponed in patients with COVID-19.

21. **Cancer History Is an Independent Risk Factor for Mortality in Hospitalized COVID-19 Patients: A Propensity Score-Matched Analysis.** Meng Y, Lu W, Guo E, et al. *J Hematol Oncol.* 2020 Jun 10;13(1):75. doi: 10.1186/s13045-020-00907-0.
https://jhoonline.biomedcentral.com/articles/10.1186/s13045-020-00907-0
Findings: 2665 patients with complete clinical outcomes were analyzed. COVID-19 patients with cancer exhibited a significant increase in mortality rate (29.4% vs. 10.2%). Furthermore, the clinical outcomes of patients with hematological malignancies were worse, with a mortality rate twice that of patients with solid tumors (50% vs. 26.1%).

Therapeutics

22. **Low-cost dexamethasone reduces death by up to one third in hospitalised patients with severe respiratory complications of COVID-19.** Randomised Evaluation of COVid-19 thERapY (RECOVERY) Trial investigators. University of Oxford news release June 16, 2020.
https://www.recoverytrial.net/files/recovery_dexamethasone_statement_160620_v2final.pdf
Findings: In March 2020, the RECOVERY trial was established to test a range of potential treatments for COVID-19, including low-dose dexamethasone (a steroid treatment). A total of 2104 patients were randomised to receive dexamethasone 6 mg once per day (either by mouth or by intravenous injection) for ten days and were compared with 4321 patients randomised to usual care alone. Among the patients who received usual care alone, 28-day mortality was highest in those who required ventilation (41%), intermediate in those patients who required oxygen only (25%), and lowest among those who did not require any respiratory intervention (13%). Dexamethasone reduced deaths by one-third in ventilated patients and by one fifth in other patients receiving oxygen only. There was no benefit among those patients who did not require respiratory support.

23. **Guidance on Acute Management of Atrial Fibrillation in COVID-19.** Rattanawong P, Shen W, El Masry J, et al. *J Am Heart Assoc.* 2020 Jun 9;e017529. doi: 10.1161/JAHA.120.017529.
https://www.ahajournals.org/doi/10.1161/JAHA.120.017529
Findings: The objective of this review is to provide a practical guide for clinicians who are managing COVID-19 patients with concomitant atrial fibrillation.

24. **Characteristics of registered clinical trials assessing treatments for COVID-19: a cross-sectional analysis.** Mehta HB, Ehrhardt S, Moore TJ, Segal JB, Alexander GC. *BMJ Open.* 2020;10(6):e039978. Published 2020 Jun 9. doi:10.1136/bmjopen-2020-039978
https://bmjopen.bmj.com/content/10/6/e039978.full
Findings: The researchers found that many of the trials lacked key features needed to optimize their scientific value such as the use of control groups and patient and clinician blinding.

25. **Ibuprofen Use and Clinical Outcomes in COVID-19 Patients.** Rinott E, Kozer E, Shapira Y, et al. *Clin Microbiol Infect.* 2020 Jun 11;S1198-743X(20)30343-8. doi: 10.1016/j.cmi.2020.06.003.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7289730/
Findings: In this cohort of 403 confirmed COVID-19 patients, Ibuprofen use was not associated with worse clinical outcomes, compared to paracetamol or no antipyretic.

26. **Prevention of Pressure Ulcers Among Individuals Cared for in the Prone Position: Lessons for the COVID-19 Emergency**. Moore Z, Patton D, Avsar P, et al. *J Wound Care.* 2020 Jun 2;29(6):312-320. doi: 10.12968/jowc.2020.29.6.312. https://www.magonlinelibrary.com/doi/abs/10.12968/jowc.2020.29.6.312?journalCode=jowc
Findings: Skin assessment should be undertaken before proning and following positioning the patient back into the supine position. Although it is essential to keep the skin clean and moisturised, using pH-balanced cleansers, there is inconsistency in terms of the evidence to support the type of moisturiser. Use of positioning devices in addition to repositioning is recommended to offload pressure points on the face and body. Further, using dressings such as hydrocolloids, transparent film and silicone may be of benefit in decreasing facial skin breakdown.

27. **Early Safety Indicators of COVID-19 Convalescent Plasma in 5,000 Patients.** Joyner MJ, Wright RS, Fairweather D, et al. *J Clin Invest.* 2020 Jun 11;140200. doi: 10.1172/JCI140200. https://www.jci.org/articles/view/140200/pdf
Findings: The incidence of all serious adverse events in the first four hours after transfusion was <1%, including mortality rate (0.3%). Of the 36 reported SAEs, there were 25 reported incidences of related SAEs, including mortality (n = 4), transfusion-associated circulatory overload (TACO; n = 7), transfusion-related acute lung injury (TRALI; n = 11), and severe allergic transfusion reactions (n = 3). However, only 2 (of 36) SAEs were judged as definitely related to the convalescent plasma transfusion by the treating physician. The seven-day mortality rate was 14.9%. Given the deadly nature of COVID 19 and the large population of critically ill patients included in these analyses, the mortality rate does not appear excessive. These early indicators suggest that transfusion of convalescent plasma is safe in hospitalized patients with COVID-19.

Transmission / Infection Control

28. **Risks to Healthcare Workers Following Tracheal Intubation of Patients With COVID-19: A Prospective International Multicentre Cohort Study.** El-Boghdadly K, Wong DJN, Owen R, et al. *Anaesthesia.* 2020 Jun 9. doi: 10.1111/anae.15170. https://onlinelibrary.wiley.com/doi/abs/10.1111/anae.15170
Findings: Between 23 March and 2 June 2020, 1718 healthcare workers from 503 hospitals in 17 countries reported 5148 tracheal intubation episodes. The overall incidence of the primary endpoint was 10.7% over a median follow-up of 32 days. The cumulative incidence within 7, 14 and 21 days of the first tracheal intubation episode was 3.6%, 6.1%, and 8.5%, respectively. The risk of the primary endpoint varied by country and was higher in females, but was not associated with other factors. Around 1 in 10 healthcare workers involved in tracheal intubation of patients with suspected or confirmed COVID-19 subsequently reported a COVID-19 outcome.

29. **A Study on Infectivity of Asymptomatic SARS-CoV-2 Carriers.** Gao M, Yang L, Chen X, et al. *Respir Med.* 2020 Aug;169:106026. doi: 10.1016/j.rmed.2020.106026. https://www.sciencedirect.com/science/article/pii/S0954611120301669?via%3Dihub

Findings: 455 contacts who were exposed to an asymptomatic COVID-19 virus carrier became the subjects of our research. All the 455 contacts were excluded from SARS-CoV-2 infection. Infectivity of some asymptomatic SARS-CoV-2 carriers is probably weak.

30. **Use of personal protective equipment against coronavirus disease 2019 by healthcare professionals in Wuhan, China: cross sectional study.** Liu M, Cheng S-Z, Xu K-W, et al. BMJ 2020; 369 :m2195 https://www.bmj.com/content/369/bmj.m2195
Findings: The average age of study participants was 35.8 years and 68.1% (286/420) were women. All 420 study participants had direct contact with patients with covid-19 and performed at least one aerosol generating procedure. During the deployment period in Wuhan, none of the study participants reported covid-19 related symptoms. When the participants returned home, they all tested negative for SARS-CoV-2 specific nucleic acids and IgM or IgG antibodies (95% confidence interval 0.0 to 0.7%). Before a safe and effective vaccine becomes available, healthcare professionals remain susceptible to covid-19. Despite being at high risk of exposure, study participants were appropriately protected and did not contract infection or develop protective immunity against SARS-CoV-2. Healthcare systems must give priority to the procurement and distribution of personal protective equipment and provide adequate training to healthcare professionals in its use.

31. **Identifying Airborne Transmission as the Dominant Route for the Spread of COVID-19.** Zhang R, Li Y, Zhang A, *Proc Natl Acad Sci U S A.* 2020 Jun 11;202009637. doi: 10.1073/pnas.2009637117. https://www.pnas.org/content/early/2020/06/10/2009637117
Findings: We show that airborne transmission is highly virulent and represents the dominant route to spread the disease. By analyzing the trend and mitigation measures in Wuhan, China, Italy, and New York City, from January 23 to May 9, 2020, we illustrate that the impacts of mitigation measures are discernable from the trends of the pandemic. Our analysis reveals that the difference with and without mandated face covering represents the determinant in shaping the pandemic trends in the three epicenters. Wearing of face masks in public corresponds to the most effective means to prevent interhuman transmission, and this inexpensive practice, in conjunction with simultaneous social distancing, quarantine, and contact tracing, represents the most likely fighting opportunity to stop the COVID-19 pandemic.

32. **Airborne SARS-CoV-2 Is Rapidly Inactivated by Simulated Sunlight.** Schuit M, Ratnesar-Shumate S, Yolitz J, et al. *J Infect Dis.* 2020 Jun 11;jiaa334. doi: 10.1093/infdis/jiaa334. https://academic.oup.com/jid/advance-article/doi/10.1093/infdis/jiaa334/5856149
Findings: This study examined the effect of simulated sunlight, relative humidity, and suspension matrix on the stability of SARS-CoV-2 in aerosols. Both simulated sunlight and matrix significantly affected the decay rate of the virus. Relative humidity alone did not affect the decay rate. Decay rates in simulated saliva, under simulated sunlight levels representative of late winter/early fall and summer were 90% loss: 19 minutes and 90% loss: 6 minutes, respectively. The mean decay rate without simulated sunlight across all relative humidity levels was 90% loss: 125 minutes. These results suggest that the potential for aerosol transmission of SARS-CoV-2 may be dependent on environmental conditions, particularly sunlight.

33. **Effects of Sterilization with Hydrogen Peroxide and Chlorine Dioxide on the Filtration Efficiency of N95, KN95, and Surgical Face Masks.** Cai C, Floyd EL. *JAMA Netw Open.* 2020;3(6):e2012099. doi:10.1001/jamanetworkopen.2020.12099
https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2767135
Findings: We compared sterilization by plasma vapor hydrogen peroxide (H2O2) and chlorine dioxide (ClO2) on the filtration efficiencies of 3 types of masks, N95s (model 1860; 3M), KN95s (Civilian Antivirus; Qingdao Sophti Health Technology), and surgical face masks (model 1541; Dukal). After H2O2 sterilization, the N95s and KN95s retained at least 95% efficiency, but the surgical face mask's efficiency was reduced. After ClO2 sterilization, the filtration efficiencies were 95.1% for N95s, 76.2% for KN95s, and 77.9% for surgical face masks. The H2O2 treatment showed a small effect on the overall filtration efficiency of the tested masks, but the ClO2 treatment showed marked reduction in the overall filtration efficiency of the KN95s and surgical face masks.

33. **A modelling framework to assess the likely effectiveness of facemasks in combination with 'lock-down' in managing the COVID-19 pandemic.** Stutt RO, Retkute R, Bradley M, et al. *Proc. R. Soc. A.* 47620200376 http://doi.org/10.1098/rspa.2020.0376
https://royalsocietypublishing.org/doi/10.1098/rspa.2020.0376#d39798e1
Findings: Both of our models show that, under a wide range of plausible parameter conditions, facemask use by the public could significantly reduce the rate of COVID-19 spread, prevent further disease waves and allow less stringent lock-down regimes. The effect is greatest when 100% of the public wear facemasks. It follows that the adoption of this simple technology ought to be re-evaluated in countries where facemask use is not being encouraged. This, of course, does not exclude the implementation of other management interventions, such as widespread testing and contact tracing.

Women & Children

34. **Rates of Maternal and Perinatal Mortality and Vertical Transmission in Pregnancies Complicated by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-Co-V-2) Infection: A Systematic Review.** Huntley BJF, Huntley ES, Di Mascio D, et al. *Obstet Gynecol*. 2020 Jun 9. doi: 10.1097/AOG.0000000000004010.
https://journals.lww.com/greenjournal/Abstract/9000/Rates_of_Maternal_and_Perinatal_Mortality_and.97336.aspx
Findings: Among 538 pregnant patients with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, rates of preterm birth (20.1%) and cesarean delivery (84.7%) were high, but maternal mortality and vertical transmission rates were low (less than 1%).

35. **Maternal Transmission of SARS-COV-2 to the Neonate, and Possible Routes for Such Transmission: A Systematic Review and Critical Analysis.** Walker KF, O'Donoghue K, Grace N, et al. *BJOG*. 2020 Jun 12. doi: 10.1111/1471-0528.16362.
https://obgyn.onlinelibrary.wiley.com/doi/abs/10.1111/1471-0528.16362

Findings: Neonatal COVID-19 infection is uncommon, uncommonly symptomatic, and the rate of infection is no greater when the baby is born vaginally, breastfed or allowed contact with the mother.

36. **Paediatric Multisystem Inflammatory Syndrome Temporally Associated With SARS-CoV-2 Mimicking Kawasaki Disease (Kawa-COVID-19): A Multicentre Cohort.** Pouletty M, Borocco C, Ouldali N, et al. *Ann Rheum Dis.* 2020 Jun 11;annrheumdis-2020-217960. doi: 10.1136/annrheumdis-2020-217960. https://ard.bmj.com/content/early/2020/06/11/annrheumdis-2020-217960
Findings: The Kawa-COVID-19 cohort differed from a comparator group of 'classical' KD by older age at onset 10 vs 2 years, lower platelet count (188 vs 383 G/L), a higher rate of myocarditis and resistance to first IVIg treatment. Kawa-COVID-19 likely represents a new systemic inflammatory syndrome temporally associated with SARS-CoV-2 infection in children.

GUIDELINES & CONSENSUS STATEMENTS

Managing ICU Surge During the COVID-19 Crisis: Rapid Guidelines. Aziz S, Arabi YM, Alhazzani W, et al. *Intensive Care Med*. 2020 Jun 8. doi: 10.1007/s00134-020-06092-5. https://link.springer.com/article/10.1007/s00134-020-06092-5

HRS/EHRA/APHRS/LAHRS/ACC/AHA Worldwide Practice Update for Telehealth and Arrhythmia Monitoring During and After a Pandemic. *J Am Coll Cardiol*. 2020 Jun 10;S0735-1097(20)35623-0. doi: 10.1016/j.jacc.2020.06.019. https://www.onlinejacc.org/content/early/2020/06/10/j.jacc.2020.06.019

American Thoracic Society: Tear Gas Use during COVID-19 Pandemic Irresponsible; Moratorium Needed.

FDA / CDC / NIH/ WHO Updates

CDC: Healthcare Facilities: Managing Operations during the COVID-19 Pandemic

FDA: Revokes Emergency Use Authorization for Chloroquine and Hydroxychloroquine

NIH: Researchers identify key genomic features that could differentiate SARS-CoV-2 from other coronaviruses that cause less severe disease

WHO: Use of chest imaging in COVID-19

Commentary

When the Dust Settles: Preventing a Mental Health Crisis in COVID-19 Clinicians. ***Ann Intern Med.*** **2020 Jun 9. doi: 10.7326/M20-3738.**

The Pandemic Claims New Victims: Prestigious Medical Journals. Two major study retractions in one month have left researchers wondering if the peer review process is broken. ***New York Times*****. June 15, 2020**

Have Deaths From COVID-19 in Europe Plateaued Due to Herd Immunity? ***Lancet.*** **2020 Jun 11;S0140-6736(20)31357-X. doi: 10.1016/S0140-6736(20)31357-X**

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