[https://www.jclinepi.com/article/S0895-4356(20)30441-8/pdf](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.

[https://www.nature.com/articles/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.* 
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**


   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.


   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.


   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**


   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


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.


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.


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.


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.


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**


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.


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.


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.


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.


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.


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**


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.


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.

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**


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.


Findings: The objective of this review is to provide a practical guide for clinicians who are managing COVID-19 patients with concomitant atrial fibrillation.


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.


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.

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.


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.


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.

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
2020; 369 :m2195 [https://www.bmj.com/content/369/bmj.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.**
10.1073/pnas.2009637117. [https://www.pnas.org/content/early/2020/06/10/2009637117](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-
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.
   [https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2767135](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 Sophi 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.

   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**

   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%).

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.

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


https://www.onlinejacc.org/content/early/2020/06/10/j.jacc.2020.06.019


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

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


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