

Title of Paper	Journal	Pub. Date	Category	Article highlights	Problem/Background	Design	Groups, for clinical studies	Results
<u>Covid-19 – The Law and Limits of Quarantine</u>	NEJM	4/9/20	Legal, Ethics & Management		COVID-19 requires social distancing. Quarantines and travel bans can be counterproductive if used incorrectly. New policy measures need to be developed in order to give agencies the power and tools required to 'flatten the curve'.	Ideas, editorials, reviews or opinions		The power to quarantine is within federal, state and CDC purview. Federal power limits spread over country or state lines. States generally have broad power in the interest of public health, however these rules can be (and have been) successfully challenged in court. Federal regulations allows the CDC to isolate, quarantine, examine or bar travel of anyone within the country who is reasonably believed to be able to spread the disease into the country or across state lines. Those quarantined by these rules are entitled to have their basic needs met as well to a judicial review. (originally published March 18 - outdated)
<u>Intensive care management of coronavirus disease 2019 (COVID-19): challenges and recommendations</u>	The Lancet	4/6/20	Diagnosis & Prevention	Thresholds for diagnostic procedures to be undertaken should be relaxed as the pandemic worsens, and given the non-specific presentation of COVID-19, the index of suspicion should remain high.	ICUs face unique challenges in their response to COVID-19, in particular among the domains of diagnostics, patient management, prevention of spread, capacity, staffing, and traiging.	Systematic review		A number of recommendations are discussed regarding an ICUs response to COVID-19. Regarding diagnosis, it is suggested that a low threshold for diagnostic testing be adopted, as well as repeated sampling (preferably from the lower respiratory tract) if necessary. Intubation poses great risk for disease spread; the operator intubating should be in full PPE. Benefits and risks of corticosteroids for treatment are unclear. Self contamination occurs often upon the removal of PPE; additional precautions should be taken at that stage. As cases surge, rationing of scarce resources will eventually take place, and plans should be developed in order for this to be implemented as needed.
<u>Recommendations from national regulatory agencies for ongoing cancer trials during the COVID-19 pandemic</u>	The Lancer Oncology	4/8/20	Legal, Ethics & Management	Risk of interventions or treatments contracting COVID-19 need to be considered in making the decision to stop/carry on with the study.	How to adapt oncology practice to balance the risk from COVID-19 and the potential benefit of the clinical trials.	Ideas, editorials, reviews or opinions		A summary of guidelines for clinical trials from US, Colombia, Norway, UK, Bulgaria, Czech Republic, and Europe. On top of these, special consideration is required especially for immunosuppressive regimens and drugs with a higher risk for drug-related lung injury. Careful consideration of additional COVID-19-associated risks of continuing these agents should be balanced against the potential issues with stopping or delaying treatment that might extend life, help with or delay symptoms, or reduce the risk for disease-related complications.
<u>Sever Acute Respiratory Syndrome Coronavirus 2-Specific Antibody Responses in Coronavirus Disease 2019 Patients</u>	Emerging Infectious Diseases	4/8/20	Diagnosis & Prevention	Using serum samples from patients with PCR-confirmed SARS-CoV-2 infections, other coronaviruses, or respiratory pathogenic infection, they validated the performance of S1 IgG and IgA ELISAs.	Validated serologic assays for SARS-CoV-2 are needed to facilitate contact tracing, seroepidemiologic studies, and vaccine evaluation studies.	Basic science		They determined that most SARS-CoV-2-infected persons seroconverted by 2 weeks after disease onset. They developed an ELISA-based assay for antibodies to the N and S proteins (main immunogenic coronavirus proteins), S1 subunit, and RBD. The assays were assessed against SARS-CoV-2, the four endemic human coronaviruses, and the 2 zoonotic coronaviruses (SARS-CoV and MERS-CoV). The IgG S1 ELISA showed higher sensitivity than the IgG-based ELISA and the IgG ELISA showed higher specificity than the IgA ELISA.
<u>Differential COVID-19-attributable mortality and BCG vaccine use in countries</u>	medRxiv	4/6/20	Epidemiology	COVID-19 mortality is greater in higher income countries and inversely associated with BCG-use	BCG vaccine has previously been shown to have non-specific protective effects on infections and may contribute to differences in observed COVID-19 case fatality rate between countries.	Cross-sectional study	National COVID-19-attributable death counts as reported on 29 March 2020 from the Johns Hopkins Coronavirus Resource Center	COVID-19-attributable mortality among BCG-using countries was 5.8 times lower [95% CI 1.8-19.0] than in non BCG-using countries after adjusting GDP, population age, and position on epidemic timeline.
<u>Deployment of Convalescent Plasma for the Prevention and Treatment of COVID-19</u>	Journal of Clinical Investigation	4/7/20	Treatment	Discusses benefits and proposes workflow to use convalescent plasma treatment for COVID-19	Convalescent plasma treatment has been successful for previous coronavirus outbreaks. How effective is it for SARS-COV-2, and what needs to be considered pre-implementation?	Ideas, editorials, reviews or opinions		Pilot case studies show symptomatic and radiological benefits of transfusion therapy. Donor criteria: >14 days post symptom resolution. Proposed dosing: 1-2 units plasma. FDA regulations: Providers may apply for compassionate care use in patient with life threatening COVID-19. Larger clinical trials underway.
<u>The COVID-19 vaccine development landscape</u>	Nat Rev Drug Discovery	4/9/20	Diagnosis & Prevention	There are many different vaccines in development utilizing a variety of techniques. There is optimism that a vaccine could be ready by early 2021. Although current efforts in design and development are led by the private sector, ultimately cooperation between them, governments, and global health organizations will be necessary for effective deployment.	There are a number of different Covid-19 vaccines under development. This article gives a brief summary of the technology being utilized in development as well as the type and location of insitutions working on them.	Ideas, editorials, reviews or opinions		The development of vaccines is being approached from a number of angles. The current vaccines in phase I trials are an mRNA vaccine, a DNA vaccine, an adenovirus vector that contains the S protein, a DC based vector carrying viral antigens, and another APC based vector carrying viral antigens. Most of these are being developed by smaller private firms based in North America.
<u>Clinical characteristics of COVID-19-infected cancer patients: A retrospective case study in three hospitals within Wuhan, China</u>	Annals of Oncology	3/26/20	Epidemiology	Anti-tumor treatment within the past 14 days was significantly associated with higher rates of potential for ICU admission, mechanical ventilation, or death. Dyspnea occurred earlier in lung cancer patients compared to the general population and other cancer patients.	How does COVID-19 manifest in patients with cancer? What risk factors are associated with severe events in these patients?	Case reports/series	28 severe COVID-19 patients with co-morbid cancer at 3 hospitals in Wuhan, China	Patients in this cohort had hypoproteinemia (89.3%), fever (82.1%), lymphopenia (82.1%), high levels of C-reactive protein (82.1%), dry cough (81%), anemia (75%), and dyspnea (50%). Severe events were a condition that warrants ICU admission, use of mechanical ventilation, or death. Multivariate-adjusted Cox proportional hazards model after adjusting for age and gender identified anti-tumor treatment within 14 days as factor that increased severe events (HR = 4.079, 95% CI 1.086-15.322, P = 0.037) as well as patchy consolidation on CT on admission (HR = 5.438, 95% CI 1.498 - 19.748, P = 0.010)

<u>Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China</u>	The Lancet Oncology	3/1/20	Prognosis	Patients with cancer might have higher risk and poorer outcomes from COVID-19	What's the status of COVID-19 patient with cancer?	Prospective cohort study	18 patient with history of cancer out of 1590 cases from 31 provinces in China by Jan 31	Patients with cancer were older, more likely to be smoking, have more polypnea, and more severe baseline CT manifestation. They also have higher risk of severe events (e.g., admit to ICU), especially for patients underwent chemotherapy/surgery. Three strategies recommended: 1) consider postponing adjuvant chemotherapy or elective surgery for stable cancer; 2) provide stronger personal protection to cancer patients and survivors; 3) consider more intensive surveillance/treatment for cancer patients infected with SARS-CoV-2.
<u>Cancer, COVID-19 and the precautionary principle: prioritizing treatment during a global pandemic</u>	Nat Rev Clinical Oncology	4/2/20	Legal, Ethics & Management	Preliminary data suggests that cancer predisposes to mortality from COVID-19. Application of the precautionary principle in cancer treatment dictates that as severity of the local COVID-19 epidemic increases, the spectrum of admissible cancer treatments should reduce to those with higher efficacy to prevent increased risk to cancer patients from COVID-19.	Given the vulnerable of cancer patients to infection, how should cancer patients be managed during the COVID-19 pandemic?	Ideas, editorials, reviews or opinions		Wu & McGoogan 2020 identifies the case fatality rate from COVID-19 in Chinese cancer patients as 6% compared to an overall case fatality rate of 2% in the whole cohort. Cancer treatment presents a risk of nosocomial SARS-CoV-2 infection for cancer patients, and where possible, treatments should be modified to minimize clinical visits. Adjustments to treatment regimens should coincide with local COVID-19 burden and medical care capacity. Additionally treatments that associate with worse viral infections such as those which suppress T- and B-cells or associate with diminished lung function should be weighed appropriately. However, treatment postponement may adversely affect outcomes. Multidisciplinary case conferences may be necessary to address individual cases.
<u>Coagulopathy and Antiphospholipid Antibodies in Patients with Covid-19</u>	NEJM	4/8/20	Prognosis	Antiphospholipid antibodies may contribute to patient mortality in COVID-19	Factors contributing to rapid decline in COVID-19 remain unknown.	Case reports/series	Three RT-PCR-confirmed patients with COVID-19	All three patients presented with clinically significant coagulopathy (anticardiolipin IgA antibodies, anti-β2-glycoprotein I IgA and IgG antibodies), antiphospholipid antibodies, and multiple infarcts. Lupus anticoagulant wasn't detected in any of the three patients
<u>Potential utilities of mask-wearing and instant hand hygiene for fighting SARS-CoV-2</u>	Journal of Medical Virology	3/31/20	Diagnosis & Prevention	Mask composed of cloth and 4 layers of paper towel both blocked about 95% of viral particles in aerosols compared to cloth alone (not statistically different from surgical mask material), and brief hand wiping with cloth soaked in water with 1% soap powder removed 98% of viral particles	Limited availability of PPE, especially N95 respirators, and difficulty performing proper soap and water handwashing are limiting factors in controlling the spread of viral infection	Basic science		Using nebulized avian influenza as a model for aerosolized COVID-19, the ability of N95, surgical, and homemade (4 layers paper towel and 1 layer cloth) masks to block externally applied viral particles was quantified by RT-PCR and these materials had 99.98%, 97.14%, and 95.15% reduction of viral particles, respectively. This suggests masks made of cloth and 4 paper towel layers may be a decent alternative to medical grade masks. Brief handwiping (3x) with cloth soaked in water with 0.05% or 0.25% active chlorine or 1% soap powder each reduced viral particle load by 96.62%, 99.98%, and 98.36%, respectively. This is a simple and cost effective method for frequent decontamination of hands, clothes, and frequently touched surfaces.
<u>A cluster randomised trial of cloth masks compared with medical masks in healthcare workers</u>	BMJ Open	3/26/15	Diagnosis & Prevention	Moisture retention, reuse of cloth masks and poor filtration may result in increased risk of infection	How efficient are the cloth masks comparing to medical masks in healthcare workers?	Clinical trial	1607 hospital healthcare workers from 74 wards randomized by ward to 3 arms that wear 1) medical masks (disposable); 2) cloth masks (rotate, wash and reuse); 3) standard practice (may include medical mask use) at all times. Intervention period: 4 weeks	The rates of Clinical respiratory illness (CRI), Influenza-like illness (ILI), Laboratory-confirmed viruses (Virus) were all higher in the cloth mask group. Penetration of cloth masks by particles was 97%, medical masks 44% and 3M 9320 N95 (<0.01%), 3M Vflex 9105 N95 (0.1%). In their recent response (3/30/20), they suggest health workers who need to use cloth masks to have > 2 for use, so that each one can be washed and dried after daily use. Sanitizer spray or UV disinfection boxes can be used to clean them during breaks in a single day.
<u>N95 Mask Decontamination using Standard Hospital Sterilization Technologies</u>	medRxiv	4/8/20	Diagnosis & Prevention	Sterilizing SARS-CoV-2 from N95 masks is possible for multiple decontamination protocols including autoclaving. Vaporized hydrogen peroxide preserves structural stability in the most types of masks tested for up to 10 rounds. Autoclaving preserved structural stability of all masks except the 3M 1860 for 10 rounds of sterilization.	Can N95 masks be successfully decontaminated for reuse? How do repeated cycles of decontamination affect structural integrity of the mask?	Basic science	Masks: 3M 1860, Aura 1870, and Vflex 1804S, and AO Safety 1054S. Decontamination: standard autoclaving, ethylene oxide, ionized hydrogen peroxide, and vaporized hydrogen peroxide. Viruses: vesicular stomatitis virus and SARS-CoV-2	All four decontamination methods were successful at eliminating infectious viral particles from the surface of the mask. Besides the 3M 1860, all masks could withstand up to 10 rounds of autoclaving. All mask could withstand three round of ethylene oxide. All mask could withstand 1 round of ionized hydrogen peroxide. All masks could withstand 10 rounds of vaporized hydrogen peroxide.

These summaries were prepared by medical and graduate students at Washington University in St. Louis

Please note that medRxiv articles have not yet been peer-reviewed.

All WashU Med faculty/staff currently have free remote access to full-text literature via their WUSTL Key at login.beckerproxy.wustl.edu/login