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2020-05-22 DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING

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Recommended Citation

Lambert, Christophe G.; Shawn Stoicu; Ingrid Hendrix; Lori D. Sloane; Mari Anixter; Anastasiya Nestsiarovich; Praveen Kumar; Nicolas Lauve; Laura Gonzalez Bosc; Melissa Cossé; Jenny Situ; Randy Ko; Ariel Hurwitz; Kristine Tollestrup; and Douglas J. Perkins. "2020-05-22 DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING." (2020). https://digitalrepository.unm.edu/hsc_covid19_briefings/42

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DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING

May 22, 2020

Executive Summary

NM Highlights: 12 positive cases at NMSU. Short-term rentals restrictions. Dine-in reopening.

US Highlights: Models to forecast COVID-19 deaths. Places of worship reopening. Contact tracing at University of Alabama.

International Highlights: More deaths among poor. Mortality data in Italy. High death toll in Brazil. Global vaccines fall behind. Italy cases drop. Vaccines to go through India.

Epidemiology Highlights: Children not pandemic drivers.

Healthcare Policy Recommendations: Burnout of HCWs. NYC surgeons' response. Foggy glasses tips.

Practice Guidelines: Recommendations are provided on surgical strategies during COVID-19, management of hypertension, anesthesia practice, avoiding drug-induced cardiovascular impairments, arrhythmia management, elective surgery reboot, nutritional management, stroke care, neurointerventional surgery, blood management.

Testing: Unregulated tests identified. Interpreting test results.

Drugs, Vaccines, Therapies, Clinical Trials: Vaccine trials results. Vaccine moves to trials. Monoclonal antibody identified. Hydroxychloroquine no benefit. Adjuvant corticosteroid therapy. Old drugs may benefit. Vaccines inducing antibodies.

Other Science: Mortality and CKD/liver disease. Transmission in pregnancy. Pathophysiology insights. Readmission characteristics. Sodium and severity. Simulated sunlight disinfects.

All of our past briefings are maintained in a UNM library repository [here](#).

Our continuously curated practice guidelines in the context of COVID-19 can be found [here](#).

Our continuously curated therapeutic evidence is maintained [here](#).

You may submit content for future briefings [here](#).

NM Highlights

- [12 individuals at New Mexico State University tested positive for COVID-19](#)

New Mexico State University announced Thursday morning that 12 individuals connected with the university's main campus in Las Cruces and Doña Ana Community College have tested positive for COVID-19. All 12 individuals were asymptomatic. The university did not specify whether any of the individuals were students, staff or otherwise connected with the campus.

- [Short-term rentals hit hard by governor's restrictions](#)

Since NM's shutdown, a flood of cancellations hit NM's vacation rentals in popular destinations like Santa Fe. For a short

period from April to May, short-term rental owners could only provide housing to out-of-state health care workers staying in NM. Last week, the governor's announcement stated that short-term vacation rentals are limited to guests to NM residents only. With slow reopening, hotels can open while vacation rentals are not allowed to do so. Owners of such lodgings expressed feelings of discrimination.

- [NM Restaurant Association relieved with governor's announcement of dine-in reopening June 1](#)

The NM Restaurant Association represents about 3,500 restaurants statewide. At least 210 permanently closed due to pandemic. The governor announced reopening of dine-in restaurants on June 1 giving restaurants to prepare the facilities for business again.

- [NM reports 8 more COVID-19 deaths and 153 additional cases on May 22](#)

As of today (5/22), the total positive cases and total deaths in the state are 6,625 and 302, respectively. The state has performed 158,383 tests, there are 206 individuals currently hospitalized for COVID-19, and 2,149 COVID-19 cases have recovered. NMDOH portal featuring epidemiologic breakdown of cases. NMDOH portal featuring epidemiologic breakdown of cases.

US Highlights

- [CDC is monitoring 15+ different models to forecast possible COVID19 deaths in the US](#)

The national ensemble forecast suggests that the rate of increase in cumulative deaths is likely to slow but still exceed 110,000 by June 13. States with low numbers of deaths reported to date are unlikely to see a rapid rise in the coming weeks, while states with high numbers of deaths reported to date are likely to see increases at varying rates.

- [Trump calls on states to immediately reopen places of worship](#)

Trump said governors should allow the houses of worship to re-open "right now for this weekend," and threatened that if they don't, "I will override the governors," he said, adding that "In America, we need more prayer, not less." Dr. Deborah Birx, White House coronavirus task force coordinator, said faith leaders considering reopening should be in touch with their local health departments to properly advise their congregants.

- [University of Alabama to require online health checks for those returning to campuses](#)

The University of Alabama system will allow students and staff to return to campus in the coming months but will require they submit online health checks every 3 days. Students and staff are also encouraged to utilize a contact tracing app, which notifies people who were near users reporting as virus-positive.

International Highlights

- [Coronavirus mortality rate among poor is five times higher than among wealthy in Spanish region](#)

Reuters: A study on Catalonia's coronavirus cases and fatalities against age and income showed: Age 45-64, male mortality rate was 100 per 100,000 in the poorest group versus 20 in the wealthiest group. Female mortality rate was 50 versus 10. Age 65-79, male mortality rate was 500 versus 250 and female mortality rate was 300 versus 100. Age 79+, male mortality rate was 2,830 versus 1,910 and among women it was 1,360 versus 1,090.

- [Mortality increase directly and indirectly caused by the COVID-19 epidemic in Italy](#)

Data from 4433 municipalities providing mortality reports until April 15th, 2020 were included for a total of 34.5 million residents from all Italian regions. Data were analyzed by region, sex and age, and compared to expected from 2015-2019. 77,339 deaths were observed between March and April, in contrast to the 50,822.6 expected. The rate ratio was 1.11 before age 60 and 1.55 afterwards. Both sexes were affected. An excess of 45,033 deaths in the study period, while the number of COVID-19 deaths was 21,046. Possible causes included both the undetected cases and the disruption of the Health Service organization.

- [Brazil coronavirus deaths surpass 20,000](#)

Aljazeera: The health ministry said on Thursday the 1,188 deaths recorded over the previous 24-hour period pushed the overall tally to 20,047. Brazil, the epicenter of the pandemic in Latin America, has now recorded more than 310,000

confirmed case.

- [80M children in 68 countries at risk for infectious disease from lack of immunizations](#)
Reuters: Travel restrictions and delivery delays have restricted regular immunization scheduling to third world countries. Experts are concerned that the restrictions could impact a COVID vaccine reaching millions if a vaccine is ever developed.
- [Daily coronavirus deaths dips but new cases steady in Italy](#)
Reuters: Italy recorded 130 new deaths from the COVID-19 epidemic on Friday against 156 the day before, while the daily tally of new cases rose marginally to 652 from 642 on Thursday.
- [Indian company could manufacture COVID-19 vaccine](#)
Reuters: Serum Institute of India expects most vaccines will pass through their company.

Epidemiology Highlights

- [Children are unlikely to be the main drivers of the COVID-19 pandemic](#)
A systematic review studied 700 scientific papers and letters and 47 full texts. Children accounted for a small fraction of COVID-19 cases and mostly had social contacts with peers or parents, rather than older people at risk of severe disease. Data on viral loads were scarce but indicated that children may have lower levels than adults, partly because they often have fewer symptoms, and this should decrease the transmission risk. Household transmission studies showed that children were rarely the index case and case studies suggested that children with COVID-19 seldom caused outbreaks. Children are unlikely to be the main drivers of the pandemic. Opening up schools and kindergartens is unlikely to impact COVID-19 mortality rates in older people.

Healthcare Policy Recommendations

- [Burnout of health care professionals: A global survey](#)
MedRx preprint: Survey of 2707 health care professionals from 60 countries found that burnout is prevalent at higher than previously reported rates and is related to high workload, job stress, and time pressure, and limited organizational support. Burnout could be mitigated by actions from healthcare institutions and other governmental and non-governmental stakeholders aimed at potentially modifiable factors, including providing additional training, organizational support, support for family, PPE, and mental health resources.
- [NYC acute care surgeons' response to the COVID-19 Pandemic](#)
Acute care surgeons at NYC hospital describe their strategies to achieve COVID-19 -related system-wide coordination, as well as institution- and service-specific reorganization. They focus on maximizing surge capacity, surgery-specific changes, and communication.
- [Tips to avoid foggy glasses when wearing a face mask](#)
Here are a few tips to help prevent glasses from fogging when wearing a face mask: Improve the fit of your mask, tape your mask, pull your mask up, use a commercial anti-fog wipe or spray.

Practice Guidelines

- [Surgical strategies during the COVID-19 crisis: The Salzburg Concept](#)
A specialized "COVID Surgery Service (CSS)" was created in Austria, exclusively dealing with the COVID patients, comprised of 6 surgeons as part of a newly established COVID-clinic. CSS provides a practical schematic algorithm for surgery strategy in infected/suspected COVID-19 patients.
- [Managing hypertension during COVID-19 pandemic](#)
The evidence summary on COVID-19 and hypertension is provided as well as practical management recommendations. For newly diagnosed hypertensive patients initiate calcium channel blockers as first-line therapy in all new patients, irrespective of ethnicity or age. The initiation of ACEi or ARBS requires repeat blood tests to ensure renal function and potassium levels

remain stable, which might not be readily available. Once health-care systems have less demand towards the end of the year, consider switching to an appropriate ACEi or ARB. If patients are already on ACEi or ARB, there are currently insufficient data to suggest cessation of this. Remind patients of 'sick-day rules', and if they are unable to drink sufficiently and have diarrhea or vomiting or a persistently low blood pressure, then their ACEi or ARBs medications should be stopped whilst they recover to reduce the risk of acute kidney injury. All hypertensive patients are encouraged to procure upper-arm home blood pressure monitors and to do self-monitoring. This would allow for titration of medication through telemedicine clinics. Patients should have enough of antihypertensive medications for at least two weeks, as there may be delays in procuring repeat prescriptions.

- [Update for anesthetists on COVID-19 management](#)

An international group of researchers including from Oxford UK, provides the updated recommendations for anesthetists in the question-answer format.

- [Cardiovascular manifestations and their treatment during COVID-19 pandemic](#)

COVID-19 might directly cause cardiovascular injuries such as pericarditis, myocarditis, myocardial infarction, heart failure, arrhythmias or thromboembolic events, which urge cardiologists to be involved in the frontline to practice. A review is provided on cardiovascular system to assist clinical cardiologists to better understand and manage COVID-19.

- [COVID-19 Management and Arrhythmia](#)

There is an increased baseline arrhythmia risk in COVID-19 patients which increases further due to infection. The paper highlights a key role of hERG (or "Kv11.1") potassium channels in drug-induced arrhythmia risk, in particular, QT interval prolongation. A list of medications is provided which could be used in the management of COVID-19 which are also associated with risk of QT prolongation (Propofol, Sevoflurane, macrolides, fluoroquinolones, Fluconazole, Pentamidine, Lopinavir/ritonavir, Favipiravir, anti-emetics Domperidone, Levomepromazine, Ondansetron, anti-arrhythmics Amiodarone, Flecainide, Ibutilide, Procainamide, Quinidine, Sotalol, antipsychotics Haloperidol, Quetiapine, Risperidone, Antimalarials such as Chloroquine, Hydroxychloroquine or Mefloquine).

- [Practical tips for a safe, successful and sustainable reboot of elective surgery](#)

7 practical tips are proposed, to be considered in stepwise progression, for healthcare systems looking to reboot their elective surgeries: 1) Know where you are on the epidemic curve; 2) Ensure access to reliable COVID-19 screening; 3) Understand hospital resources; 4) Ensure appropriate case selection and prioritization; 5) Optimize the patient's post-discharge planning; 6) Start small, stay current and be adaptable; 7) Be prepared for roadblocks ahead.

- [Nutritional management of COVID-19 patients in a rehabilitation unit](#)

Collaboration between the Rehabilitation Unit of the San Raffaele Scientific Institute and the dietetics service created an interdisciplinary and integrated management of the nutritional status of COVID-19 patients, based on the latest scientific data. Here the authors report their three-step nutritional protocol: 1) nutritional assessment and malnutrition screening; 2) setting the nutritional treatment; 3) continuous monitoring.

- [Impact of the COVID-19 on stroke care and potential solutions](#)

A survey of leaders from 280 stroke centers showed that capacity for stroke care was reduced in the majority of the hospitals. Most of the stroke centers stopped or reduced public stroke education. Hospital admissions related to stroke dropped by approximately 40%; thrombolysis and thrombectomy cases dropped by approximately 25%. Recommendations based on the data are provided. Stroke awareness education activities should be enhanced. Establishing a fast-track COVID-19 screening process for patients with potential stroke is highly desirable. A rapid laboratory test for the virus should be prioritized for patients with stroke, and the test should be part of the existing stroke fast-track pathway. The initiation of stroke therapy should not be hindered by the COVID-19 screening. Resource management should be established as quickly as possible. A campaign to encourage appropriate hospital evaluation for emergent, treatable, time-sensitive diseases such as stroke and myocardial infarction should be initiated at a national level.

- [Chinese guidelines on prevention and control of COVID-19 during neurointerventional surgery](#)

Chinese Federation of Interventional and Therapeutic Neuroradiology (CFITN) and the International Society for Neurovascular Disease (ISNVD) compiled an expert consensus on fighting against the COVID-19, including infection

prevention and control procedures in the outpatient/inpatient/catheterization lab settings, medical staff self-protection, operating room requirements, management of suspected or confirmed COVID-19 cases, and treatment of emergency stroke patients.

- [Patient blood management during COVID-19 pandemic](#)

A meta-analysis revealed that the implementation of Patient Blood Management (PBM) leads to an overall decrease in transfusion demand by 39% and results in reduced morbidity, namely 25% reduce in acute renal failure and thrombotic events. PBM is an evidence-based multimodal approach based on three main pillars: diagnosis and treatment of anemia, minimizing (iatrogenic) blood loss, rationale use of blood units. Its most important components are: Preoperative intravenous iron substitution; Intraoperative tranexamic acid; Maintaining physiological conditions: normothermia, pH > 7.2, Calcium > 1.1 mmol/L; Cell salvage and re-transfusion of processed blood; Single-unit policy (reassessment after each blood unit); Rational numbers of diagnostic blood samples; Non-invasive hemoglobin measurement; Correction of coagulation anomalies ASAP.

Testing

- [FDA names 27 antibody tests that no longer meet regulation to be sold](#)

Reuters: FDA found 27 antibody tests that no longer meet regulation. According to bridged rules announced May 4, vendors must apply for emergency FDA authorization for tests within 10 days. The FDA had previously listed 200+ companies that had intended to sell the tests, more than half of which were from China.

- [CDC guide for interpreting antibody test results and determining what actions to take](#)

It lists actions one should take depending on the antibody test results, positive or negative, along with information on evaluating and testing for healthcare professionals.

Drugs, Vaccines, Therapies, Clinical Trials

- [Coronavirus vaccine trials delivered their first results but promise unclear](#)

Nature: More than 90 vaccines are being developed against SARS-CoV-2 by research teams in companies and universities across the world. Researchers are trialing different technologies, some of which haven't been used in a licensed vaccine before. At least six groups have already begun injecting formulations into volunteers in safety trials; others have started testing in animals. Nature's graphical guide explains each vaccine design (<https://www.nature.com/articles/d41586-020-01221-y>). Moderna revealed its COVID-19 vaccine triggered an immune response in people, and protected mice from lung infections with the coronavirus SARS-CoV-2. Tests of other fast-tracked vaccines show that they have prevented infections in the lungs of monkeys exposed to SARS-CoV-2, but not in some other parts of the body. A vaccine being developed at the University of Oxford, UK, that is also in human trials — protected six monkeys from pneumonia, but the animals' noses harbored as much virus as did those of unvaccinated monkeys, researchers reported¹ last week in a bioRxiv preprint. A Chinese group reported similar caveats about its own vaccine's early animal tests this month. Despite uncertainties, all three teams are pressing ahead with clinical trials

- [Oxford and AstraZeneca COVID-19 vaccine candidate to move to larger human trials](#)

Oxford University and AstraZeneca are recruiting around 10,000 adults and children in Britain for trials of an experimental coronavirus vaccine, a day after receiving U.S. backing worth up to \$1.2 billion. Researchers are mainly looking for healthcare staff and other public-facing workers to join the trial as in order to get a clear signal on the vaccine's efficacy.

- [A human monoclonal antibody blocking SARS-CoV-2 infection](#)

This is the first report of a human monoclonal antibody that neutralizes SARS-CoV-2 (and SARS-CoV) in cell culture. This cross-neutralizing antibody targets a communal epitope on these viruses and may offer potential for prevention and treatment of COVID-19.

- [Hydroxychloroquine or chloroquine +/- macrolide does not confer benefit and increases frequency of ventricular arrhythmia](#)

A multinational registry analysis of the use of hydroxychloroquine or chloroquine with or without a macrolide was unable to confirm a benefit when used for treatment of COVID-19. Each of these drug regimens was associated with decreased in-hospital survival and increased frequency of ventricular arrhythmias.

- [Adjuvant corticosteroid therapy for critically ill patients with COVID-19](#)

The data on 244 patients with COVID-19 who had complete records and were critically ill and treated with antiviral agents were enrolled. All patients were given antiviral therapy and 151 patients (62%) were given adjuvant corticosteroid treatment. Multivariate analysis adjusted for major mortality-associated variables and propensity score and indicated that corticosteroid treatment was independent from overall mortality at 28 days after admission (adjusted OR 1.05) The addition of adjuvant corticosteroid therapy was not associated with 28-day mortality. However, increased corticosteroid dosage was significantly associated with elevated mortality risk after adjustment for administration duration; every 10-mg increase in dosage was associated with an additional 4% mortality risk.

- [A comprehensive review on drug repositioning against COVID19](#)

Old drugs that may be effective are from different pharmacological categories such as antimalarials, anthelmintic, anti-protozoal, anti-HIVs, anti-influenza, anti-hepacivirus, antineoplastic, neutralizing antibodies, immunoglobulins, and interferons. In vitro, in vivo, or preliminary trials of these drugs in the treatment of COVID-19 have been encouraging, leading to new research projects and trials to find the best drug/s. In this review, the authors discuss the possible mechanisms of these drugs against COVID-19.

- [Vaccines inducing antibodies targeting SARS-CoV-2 receptor binding domain may be broadly effective](#)

MedRx preprint: Virus entry into cells depends on the receptor binding domain (RBD) of the SARS-CoV-2 spike (S) protein. ELISA assays performed on the plasma of 149 convalescent patients revealed low titers of rare, but recurring RBD-specific antibodies in every individual tested. Despite low titers, antibodies to 3 distinct epitopes on RBD neutralized at half-maximal inhibitory concentrations (IC50s) as low as single digit ng/mL. Females were found to have lower anti-RBD, anti-S IgG titers and overall lower neutralizing activity than males.

- [30 New COVID-19 Trials registered today at clinicaltrials.gov](#)

Treatment trials: Clarithromycin, RT-PCR, Inflammasome and platelets, ACT-20, Immunogenic Viral Epitopes, Levilimab, Inopulse, Heparin, Marilimumab, Thales Thermography Triage, Immunomodulatory MSC, GCO-002 CACOV-19. At the time of writing, a total of 1565 were active, 92 completed, and 3 posted results.

Other Science

- [Increased severity and mortality of COVID-19 in patients with liver and kidney diseases](#)

A meta-analysis of 22 studies including 5595 COVID-19 patients showed that, in patients with COVID-19 and underlying liver diseases, 57.33% (43/75) of cases were severe, with 17.65% mortality, while in CKD patients, 83.93% (47/56) of cases were severe and 53.33% (8/15) mortality was reported. The prevalence of liver diseases and chronic kidney disease (CKD) in COVID-19 patients were 3% (95% CI; 2-3%) and 1% (95% CI; 1-2%).

- [No evidence of vertical transmission in late pregnancy](#)

A meta-analysis was conducted on 87 SARS-CoV-2 positive pregnant women. 78% suffered from mild or moderate COVID-19, 99.9%, 86% had cough, and 68% had fever ($p = .022$ and $p < .001$). The overall proportions of vertical transmission, still birth, and neonatal death were zero, 0.002, and, 0.002, respectively ($p = 1$, $p = .86$, and $p = .89$, respectively). The means of the first- and fifth-minute Apgar scores were 8.86 and 9, respectively ($p < .001$ for both). The authors report no evidence of vertical transmission at least in late pregnancy. Although pregnant women are at an immunosuppressive state due to the physiological changes during pregnancy, most patients suffered from mild or moderate COVID-19 pneumonia with no pregnancy loss.

- [Pathophysiology of SARS-CoV-2: Results from Mount Sinai autopsies](#)

MedRx preprint: Novel findings from autopsies of 67 COVID-19 positive patients include an endothelial phenotype of ACE2 in selected organs, which correlates with clotting abnormalities and thrombotic microangiopathy, addressing the prominent coagulopathy and neuropsychiatric symptoms. Another original observation is that of macrophage activation syndrome, with hemophagocytosis and a hemophagocytic lymphohistiocytosis-like disorder, underlying the microangiopathy and excessive cytokine release.

- [Readmission characteristics include COPD, HTN, and lower rates of anticoagulation](#)

MedRx preprint: Low number of patients return to the hospital after discharge, but of those the most common reason for return was respiratory distress. These patients had a shorter initial length of stay, less likely to have been admitted to the ICU, a higher proportion of COPD and hypertension, and a trend towards lower rates of in-hospital treatment-dose anticoagulation.

- [Low blood sodium associated with increased risk and severity](#)

MedRx preprint: The authors of this systematic review and meta-analysis report that the mean serum sodium concentration in severe/critical patients (137.0) was significantly lower than those in mild and moderate patients (140.8 and 138.7, respectively). Changes were not obvious in the serum chlorine and potassium concentrations. The low sodium state may not be the consequence of virus infection, but could be a physiological state possibly caused by living habits such as low salt diet and during aging process, which may result in ACE2 overexpression, and increase the risk and severity.

- [Simulated sunlight rapidly inactivates SARS-CoV-2 on surfaces](#)

Simulated sunlight rapidly inactivated SARS-CoV-2 suspended in either simulated saliva or culture media and dried on stainless steel coupons. Ninety percent of infectious virus was inactivated every 6.8 minutes in simulated saliva and every 14.3 minutes in culture media when exposed to simulated sunlight representative of the summer solstice at 40°N latitude at sea level on a clear day. Significant inactivation also occurred, albeit at a slower rate, under lower simulated sunlight levels. The present study provides the first evidence that sunlight may rapidly inactivate SARS-CoV-2 on surfaces, these data indicate that natural sunlight may be effective as a disinfectant for contaminated non-porous materials.

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