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2020-04-21 DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING

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DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING

April 21, 2020

Executive Summary

NM updates. YesNM assistance. Ventilator production. Georgia reopening. Wisconsin legal challenge. Pending immigration suspension. Religious restriction parity. Hong Kong restrictions. Global food shortages. Mexico rapid spread. Oil futures negative. Socio-economic implications. Clinical disease patterns. Healthcare worker testing. WHO courses. Vaccine volunteers to be infected. Intervention impacts. Social distancing tribal. NIH releases treatment guidelines. Guidelines on: thromboembolism Tx, IBD endoscopy, vascular surgery, nutritional management, cutaneous lymphomas, cardiac surgery triage, cellular therapy. LA has 40X known cases. At-home testing. ELISA diagnostic tool. CRISPR vs. PCR. Testing coordination. Hydroxychloroquine prophylaxis. VA hydroxychloroquine study. 52 new clinical trials. Coagulation disorders. Cardiac injury. Anosmia features. D-dimer risk. Early warning scores. Artificial intelligence review.

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

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

NM Highlights

- [7 new deaths and 103 additional confirmed COVID-19 cases reported in NM](#)

The total positive cases and total deaths in the state are 2,072 and 65, respectively. As of today, the state has performed 40,877 tests, there are 119 individuals currently hospitalized for COVID-19, and 529 COVID-19 cases have recovered. New NMDOH portal featuring epidemiologic breakdown of cases.

- [YesNM offers temporary assistance for needy families \(TANF\) and other resources](#)

YesNM is offering TANF, energy assistance, medical assistance, and food assistance. Apply online or use their customer service line: 1-800-283-4465.

US Highlights

- [U.S. increases ventilator production as predicted need decreases](#)

U.S. started a \$2.9 billion program to build 187,000 ventilators, which is significantly more than the 16,631 invasive ventilators needed that the Institute for Health Metrics and Evaluation currently forecasts. The number of invasive and non-invasive ventilators set to be built has not been released. Surplus ventilators will be sent to other countries in need.

- [Georgia tests boundaries of resuming "normal" life post-pandemic with 'risky' reopening](#)

No states have met basic White House guidelines of a 2 week decline in cases to reopen. Georgia has been hit hardest, with 19,000 cases and nearly 800 deaths, including a dense cluster in the state's southwest. Amid a national debate over how to fight the virus while mitigating the deep economic toll, these moves are the first to test borders of resuming "normal" life.

- [Wisconsin Republicans file lawsuit challenging coronavirus stay-at-home order](#)

Republican lawmakers in Wisconsin filed a lawsuit against Democratic Governor Tony Evers, challenging his stay-at-home order. The lawsuit asks the Wisconsin Supreme Court to issue a temporary injunction on the state's order that was extended until May 26 by the Wisconsin's Department of Health Services secretary last week as directed by the governor.

- [President Trump plans to sign executive order to temporarily suspend immigration to the US](#)

"In light of the attack from the Invisible Enemy, as well as the need to protect the jobs of our GREAT American Citizens, I will be signing an Executive Order to temporarily suspend immigration into the United States!", President Trump tweeted late on

Monday (4/20). Over the past four weeks, more than 20 million Americans have registered for unemployment benefits. That amounts to roughly as many jobs as employers had added over the previous decade.

- [US Attorney General opposes restrictions on religious activity not applied to nonreligious activity](#)

US Attorney General William P. Barr stated, in response to a recent Mississippi church case, that while restrictions on constitutional rights are reasonable during times of emergencies, the government cannot allow restaurants, theaters, and other venues to remain open while ordering houses of worship to close.

International Highlights

- [Less severe restrictions in Hong Kong successfully reduced spread](#)

Perceived severity of COVID increased voluntary behavioral changes in Hong Kong which has also effectively dropped influenza rates. Government tracing was both exhaustive and effective at containing active cases. <http://doi.org/dsfw> Hong Kong slowed the spread of SARS-CoV-2 through a combination of intensive surveillance, quarantining and social distancing without relying on severe measures used elsewhere. See a round-up of the latest #COVID19 research.

- [World Food Program warns of food shortages](#)

A report estimates that the number suffering from hunger may increase from 135 million to more than 250 million. Those most at risk are in 10 countries affected by conflict, economic crisis and climate change.

- [Mexico reports rapid spread and calls for public adherence to social distancing](#)

On April 20, Mexico reported 511 new cases for a total of 8,772 cases. Due to the limited testing capacity, the total number of cases is expected to be higher at 55,951 cases across the country. Further social distancing efforts are being made.

Economics, Workforce, Supply Chain, PPE Highlights

- [U.S. oversupplies oil and futures price per barrel settles at -\\$37.63 for US benchmark](#)

Due to excessive supply and lower demand, US oil price dropped on Monday (4/20). Currently, there are 19.3 million barrels of crude stock and 21 million barrels of storage space available, which is expected to be filled by the end of May. Potential solutions include transporting the oil to offshore storage or selling to the US Strategic Petroleum Reserve and storing the oil in the ground.

- [A review of the socio-economic implications of COVID-19 pandemic](#)

In a review article in International Journal of Surgery the authors summarize the effect of COVID-19 on individual aspects of the world economy, focusing on primary sectors which include industries involved in the extraction of raw materials, secondary sectors involved in the production of finished products and tertiary sectors to include all service provision industries.

Epidemiology Highlights

- [Fatality rate associated with cumulative cases and negatively associated with intensity of testing](#)

The flattening-the-curve hypothesis was tested by assessing the association between case fatality rate and cumulative number of COVID-19 infections/100,000 inhabitants. The analysis controlled for age of the epidemic, COVID-19 testing intensity, and health expenditure per capita. Case fatality rate was positively associated with cumulative number of cases and negatively associated with the intensity of testing. Countries that have slowed the spread have been able to reduce mortality by not overwhelming their hospitals.

Healthcare Policy Recommendations

- [Healthcare worker testing: an in-hospital transmission reduction strategy](#)

Testing of both symptomatic and asymptomatic healthcare workers is important in curtailing spread of SARS-CoV-2. By the provision of adequate PPE, the wellbeing of HCWs can be promoted by ensuring that infected colleagues are promptly tested

and isolated.

- [WHO offers self-paced online courses on COVID-19](#)

Training includes an introduction to COVID-19, health and safety, prevention and control, clinical care, country capacitation, treatment facilities, and field data tools. Courses range from 15 minutes to 10 hours.

- [United States lawmakers want volunteers to be infected with coronavirus to test vaccines](#)

35 US lawmakers are supporting regulators in the US to embrace the controversial strategy of intentionally infecting volunteers with SARS-CoV-2 in order to accelerate the development of an effective vaccine. The lawmakers also back the idea of parallel, simultaneous testing of different doses of a vaccine—as opposed to the traditional practice of sequential testing.

- [Impact of various interventions on reduction of new cases](#)

MedRxiv preprint: Model informed by multinational data, including US, compares the effectiveness of non-pharmaceutical interventions in early stages of outbreak. Closure of venues is associated with the largest reduction (33%; 95% CI 16-47 %). The reduction is next highest for work bans on non-essential business activities (28%; 95% CI 10-42 %) and border closures (26 %; 95% CI 13–37 %). School closures yield a reduction of only (11% 95% CI 0-27 %) and its relative impact is one of the lowest among the various policy measures considered in this analysis.

- [How to cope with social distancing in tribal communities with local COVID-19 transmission](#)

Social distancing lowers the chances of spreading illness between people, but it may prevent people from following some traditional and ceremonial practices. This may be especially relevant for American Indian/Alaska Native (AI/AN) communities. CDC guidelines for how to cope with social distancing in the tribal communities are presented here.

Practice Guidelines

- [NIH treatment guidelines advise against exposure prophylaxis](#)

NIH panel does not recommend any drug for pre- or post-exposure prophylaxis outside of clinical trials. It neither makes recommendation for any specific antiviral or immunomodulatory treatments, as no drug was proven to be safe and effective. Certain therapies can be used under investigation (summary of studies provided). They advised against hydroxychloroquine-azithromycin due to toxicity, against HIV protease inhibitors due to lack of trial results and unfavorable pharmacodynamics, against interferons and Janus kinase inhibitors, and against systemic corticosteroids for mechanically ventilated adults with COVID-19 without ARDS. Low-dose corticosteroids are preferred over no corticosteroids in patients with refractory shock.

- [Diagnosis and treatment of suspected venous thromboembolism during COVID-19](#)

This article summarizes a broad institutional consensus focusing on evaluation and recommended empirical therapy for COVID-19 patients. A committee was comprised of vascular thrombosis experts, vascular surgeons, vascular medicine physicians, and vascular technologist.

- [Endoscopy in inflammatory bowel disease during and after COVID-19 pandemic](#)

The Lancet reports: The authors highlight different scenarios in which endoscopy should still be performed urgently in patients with IBD, as well as recommendations regarding the use of PPE. They suggest a pathway for performing safe endoscopy and discuss the potential risks of postponing endoscopy in IBD. Also, they propose a post-pandemic plan for access to endoscopy.

- [Vascular surgery department adjustments during COVID-19 pandemic](#)

Portuguese report on managing the largest Lisbon clinic's vascular surgery department.

- [ESPEN guidance for nutritional management of individuals with SARS-CoV-2](#)

European Society for Clinical Nutrition and Metabolism (ESPEN) provides guidance for nutritional management of COVID-19 patients by proposing 10 practical recommendations. The guidance is focused to those in the ICU or in the presence of older age and polymorbidity, which are independently associated with malnutrition.

- [US recommendations on cutaneous lymphoma management \(pre-proof\)](#)

United States Cutaneous Lymphoma Consortium Recommendations for Treatment of Cutaneous Lymphomas. The authors

propose strategies for treating patients with primary cutaneous lymphoma, including lesions categorization and emphasis on telemedicine.

- [STS guidelines on triaging cardiac surgery patients during the COVID-19 pandemic](#)

The guidelines are on behalf of the Society of Thoracic Surgeons (STS) COVID-19 Taskforce and the Workforce for Adult Cardiac and Vascular Surgery. Guidance provided to the adult cardiac surgery perioperative community regarding management of patients considered or scheduled for surgical procedures in the context of the current pandemic.

- [Hematopoietic cell transplantation and cellular therapy: ASTCT statement](#)

The American Society for Transplantation and Cellular Therapy (ASTCT) Pharmacy Special Interest Group (SIG) Steering Committee provides this position statement for pharmacy practice management and clinical management recommendations for COVID-19 in HCT and cellular therapy recipients.

Testing

- [ELISA testing shows infection rates 40 times higher than known cases in Los Angeles](#)

A study of 863 Los Angeles county residents found 4.1% of adults tested positive for COVID-19 antibodies indicating they had the virus in the past. This suggests a lower death rate and a rate of infection 40 times more than the number of confirmed cases, which mirrors the results from a preprint describing an [earlier study](#) from Stanford University. If confirmed, the estimates also suggest that disease prediction models and public health strategies need to be changed. However, antibody tests come under increasing scrutiny recently over a high number of false positives reported in the kits.

- [FDA authorizes first at-home sample collection for LabCorp's COVID-19 test](#)

60,000 at-home diagnostic kits are now available to eligible patients for \$119. Healthcare workers will be given priority. The samples collected by these kits show no difference in quality or results. The test results can be expected within 2 days after the sample is received.

- [Diagnosis via ELISA effective in middle and late stage disease](#)

Serodiagnostic power of the specific IgM and IgG antibodies against SARS-CoV-2 was investigated using enzyme-linked immunosorbent assay (ELISA) to evaluate sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and consistency rate. Results revealed that antibodies can be detected in the middle and later stage of the illness.

- [CRISPR testing as accurate as PCR in 45 min](#)

Return results in about 45 minutes with comparable accuracy to that of conventional RT-PCR testing.

- [US researchers suggest better coordination for testing at an institutional and national level](#)

A survey of more than 4,000 researchers. Results suggest that coordination could make hundreds of thousands more tests for coronavirus available.

Promising Drugs, Vaccines, Therapies, Clinical Trials

- [Post-exposure prophylaxis for COVID-19 with hydroxychloroquine](#)

In one Korean long-term care hospital, post-exposure prophylaxis (PEP) with HCQ was done in 189 patients and 22 healthcare workers (HCWs) who were COVID-19-negative by PCR. PEP was completed in 184 (97.4%) patients and 21 (95.5%) HCWs without serious adverse events. At the end of 14 days of quarantine, follow-up PCR tests were all negative. There were no untreated controls.

- [No evidence of clinical benefit from hydroxychloroquine therapy in a retrospective analysis in US veterans hospitalized with COVID-19](#)

MedRxiv preprint: In this non peer-reviewed, retrospective study, 97 COVID-19 patients were treated with hydroxychloroquine (HCQ), 113 were treated with HCQ and azithromycin (AZ) and 158 did not receive HCQ. HCQ with or without AZ did not reduce risk of ventilation, and there was an association with increased overall mortality in patients treated with HCQ alone after adjustment for initial clinical characteristics via propensity scores.

- [52 new COVID-19 trials registered today at clinicaltrials.gov](#)

Treatment trials: Echocardiographic Manifestation, Beneficial Effects of Interferon Beta 1a, Ganovo (Danoprevir) With Ritonavir, Efficacy and Safety of Hydroxychloroquine, Glucocorticoid Therapy, Prognostic Factors of Patients with COVID-19, Clinical and Radiomic Model of COVID-19, Acute Kidney Injury, Lopinavir/Ritonavir, Ribavirin and IFN-beta, Ayurveda, Seroprevalence of MERS-CoV IgG, Impact of Swab Site, Pharmacokinetics of SAB-301, Pharmacokinetics and Immunogenicity, Immunogenicity of Vaccine Candidate MVA-MERS-S, SARS Plasma by Apheresis, Alferon LDO, Streptokinase Versus Unfractionated Heparin Nebulization. At time of writing, a total of [729](#) were active, [33](#) completed, and [3](#) posted results.

Other Science

- [Coagulation disorders in coronavirus](#)

Review: Dysregulation of the coagulation cascade and the subsequent formation of intra-alveolar or systemic fibrin clots are prominent findings in coronavirus infections associated with severe respiratory disease and have been demonstrated in both humans and animal models. They can be attributed to the prothrombotic response, which attempts to prevent diffuse alveolar hemorrhage, but can instead result in overt clot formation with detrimental effects in patient recovery and survival.

- [Severe COVID-19 disease is associated with cardiac injury and portends a poor prognosis](#)

A systemic review and meta-analysis of 28 studies found that patients with severe COVID-19 disease are associated with cardiac injury and that cardiac injury biomarkers were found to be elevated mostly in non-surviving COVID-19 patients. Meta regression suggested that cardiac injury biomarker differences of severity are related to history of hypertension

- [Features of anosmia in COVID-19](#)

A retrospective study of 54 patients with anosmia: the symptom began 4.4 (+/-1.9) days after infection onset. The mean duration of anosmia was 8.9 (+/-6.3) days and 98% of patients recovered within 28 days.

- [In-hospital mortality higher in patients with admission D-dimer > 2 ug/ml](#)

Measuring D-dimer has been recommended for COVID-19 patients. D-dimer of 2.0 ug/ml on admission may be optimum cutoff as those patients had significantly higher in-hospital mortality (sensitivity = 92%, specificity = 83%). D-dimer may improve management as it is an early predictive marker.

- [Early warning score based on age, chronic disease, NLR, CRP, D-dimer to predict clinical deterioration](#)

MedRxiv preprint: Early Warning Score (EWAS) [0-4.5] is a useful tool for rapid triage and direction of management. Both cohorts of this experiment had increased rates of clinical deterioration in patients with: older age, pre-existing chronic disease, elevated D-dimer, elevated neutrophil to lymphocyte ratio, and elevated CRP. D-dimer >.8 mg/L found to have greatest hazard ratio. Low-risk patients should be isolated and treated in "mobile cabin hospitals", medium-risk patients in general wards, and high-risk patients in ICU.

- [Review of artificial intelligence in diagnosing COVID-19](#)

The authors review the rapid responses in the community of medical imaging (empowered by AI) toward COVID-19. AI-empowered image acquisition can help automate the scanning procedure and reshape the workflow with minimal contact to patients, providing the best protection to the imaging technicians. Also, AI can improve work efficiency by accurate delineation of infections in X-ray and CT images, facilitating subsequent quantification

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