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2020-05-12 DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING

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DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING

May 12, 2020

Executive Summary

MAT modeling update. Sandia Labs tribes fundraising. NM worker testing. NM case count. Gallup cases rise. Project ECHO COVID-19 guidance. Santa Fe Opera cancels. Fauci stresses federal guidelines. Twitter labels COVID-19 misinformation. NCAA financial woes. Treatment searches over animals. France surpasses Spain deaths. Wuhan to test all. 113-year old survivor. Isolation chamber. Pharmacy social distancing. WA Choir superspreader event. Infected pregnancy outcomes good. Immunity licenses ethical. Family bereavement services. Pharmacists maintain medication supplies. Psychological crisis intervention students. Guidelines are provided on managing OCD and COVID-19-related myocarditis. Call for helmet continuous positive airway pressure and prone positioning. Computational prediction of respiratory decompensation. LabCorp at-home testing. Multi-stage group testing. High rate of IgG antibodies. Systemic anticoagulation, tocilizumab, and HCQ+azithromycin claimed to reduce mortality. Moderna vaccine gets fast-tracked. Gilead out-licenses remdesivir. 51 new COVID-19 trials. ACE2 plasma concentration. SARS-CoV-2 ORFb gene. Sexual behavior. Hypoactive orbitofrontal cortex.

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

- [New Mexico COVID-19 modeling update from Medical Advisory Team](#)
Prevalence rates have increased across all regions since last week. New Mexico doubling time is 6.8 days. Age-adjusted rates per 100,000 population: American Indian or Alaska Native 213.8, Black or African American 29.1, Hispanic or Latino 10.2, White 7.1, Asian 5.4. Regionally, NW's prevalence rates are the highest followed by Metro and SW. Ventilator use rate has been steady at ~25% of hospitalized cases since mid-April. Mortality rate is highest in NW region. Full pdf report [here](#).
- [Sandia Labs collects \\$245,000 for tribes, pueblos](#)
Fundraising drive initiated by Sandia employees – including many Native Americans and members of Sandia's American Indian Outreach Committee - resulted in a collection of \$220,000 from 1,741 donors in just two weeks. National Technology & Engineering Solutions of Sandia LLC, which manages the labs, added a \$25,000 match. Native Americans have accounted for more than 55% of New Mexico's confirmed coronavirus cases.
- [NM Dept. of Health opens COVID-19 testing to all New Mexico workers](#)
The NM DOH announced on Monday that COVID-19 testing will be available to all workers in the state starting May 12, regardless of symptoms. This includes all government employees, utility and construction workers, grocery and pharmacy workers, retail and wholesale, food services or other service industries. Lovelace Hospital-Downtown will be open to the public for drive-thru testing from 9 am-3 pm. A full list of all testing locations in the state is available on the [DOH website](#).
- [NM reports 11 more COVID-19 deaths and 143 additional cases on May 12](#)
As of today (5/12), the total positive cases and total deaths in the state are 5,212 and 219, respectively. The state has

performed 110,289 tests, there are 199 individuals currently hospitalized for COVID-19, and 1,434 COVID-19 cases have recovered. [New NMDOH portal featuring epidemiologic breakdown of cases.](#)

- [Despite lockdown cases still on rise in Gallup](#)

McKinley and San Juan counties continue to account for majority of New Mexico's cases and deaths, including 136 of 207 (66%) additional COVID-19 cases reported on May 11. Out of 208 deaths, 121 patients (58%) were from those two counties.

- [UNM's Project ECHO providing COVID-19 guidance to frontline workers](#)

Project ECHO is providing telehealth research and clinics to clinicians and health care workers around the state and around the world on how to best address lingering questions, and best practices. Nine sessions per week are offered for educators and first responders on issues like best practices, testing, contact tracing, using and re-using PPE during a shortage.

- [Santa Fe Opera closes for the upcoming season, asks patrons to donate cost of tickets](#)

The Santa Fe Opera has canceled its season after exploring a variety of options to open safely. The opera has already sold more than \$5 million in tickets and is asking patrons to donate the tickets so the opera can pay artists and staff. A group of patrons has offered up to \$3 million dollars in donated tickets.

US Highlights

- [Fauci warns states not to skip over federal guidelines to lift restrictions](#)

Today, Dr. Anthony Fauci warned lawmakers, "If we skip over the checkpoints in the guidelines to 'Open America Again,' then we risk the danger of multiple outbreaks throughout the country...needless suffering and death, [and] would actually set us back on our quest to return to normal." He added there are multiple potential vaccines in development and that he hopes the administration will have some idea whether they work by late fall, early winter.

- [Twitter to add warning labels to coronavirus misinformation](#)

Twitter will start adding labels and warning messages on tweets with disputed or misleading information about COVID-19. The labels will provide links to more information and will be added regardless of who sent the tweet. Tweets with a call to action that could cause harm will continue to be removed from the site.

- [Loss of NCAA March Madness causes budget crunch](#)

Due to COVID-19 spread, March Madness came to a screeching halt as the NCAA canceled its men's and women's basketball tournaments and other spring sports. The canceled championships have caused a budget crisis that could limit play in the fall.

International Highlights

- [Google trend data: Public more interested in treatment than theories re origin or animal transmission](#)

A letter to the editor presents Worldwide Google Trends data suggesting that people are more interested in potential vaccines and treatment than in the animal origin of the virus. The study notes a low level of searches for domestic animals suggesting people are not particularly worried about their pets being reservoirs.

- [France now ahead of Spain as fourth highest death toll in the world](#)

France's death toll from the coronavirus rose to 26,991 on Tuesday, overtaking Spain (26,920) to become the country with the fourth highest number of fatalities after the United States (80,606), Britain (32,065) and Italy (30,911). French government says it will consider locking down the country again if daily new infections rise above 3,000 again. In the past six days, their case count increases by about 670 per day on average.

- [China city of Wuhan drawing plans to test all 11 million residents](#)

Each Wuhan district is set to submit details for 10-day testing plans, regardless of whether or not there is a known active outbreak in the area. Densely populated communities and the elderly will be prioritized. The call for widespread testing has arisen after the city saw new cases for the first time since April 3rd. The project has been criticized over cost and feasibility.

- ['Oldest woman in Spain' beats coronavirus at 113](#)

Maria Branyas, has recovered from the virus, having only suffered mild symptoms. She lived through the flu pandemic of

1918, the Spanish Civil War of 1936, and now COVID-19.

Economics, Workforce, Supply Chain, PPE Highlights

- [Portable negative air flow isolation chamber created for aerosol-generating procedures](#)
A rigid cubic frame chamber draped with a clear plastic bag was created that relies almost exclusively on materials available at hardware stores. The construction protects healthcare providers in caring for confirmed or suspected COVID-19 patients. These include patients undergoing monitored anesthesia care, regional anesthesia, or treated with noninvasive ventilation. It can be used in over-crowded emergency department or wards, in endoscopy/bronchoscopy suites, in radiology suites, and during patient transportation.
- [Review of social distancing and the use of PPE by community pharmacy personnel](#)
Directives on social distancing and use of PPE by community pharmacy personnel differ among 15 countries. Pharmacy personnel should be protected at least with a medical-grade face mask, along with other PPE if necessary. The distribution of local PPE resources should take into consideration the need by community pharmacy personnel, who may be neglected due to false assumptions for low risk of transmission.

Epidemiology Highlights

- [Superspreader event at choir practice](#)
Following a 2.5-hour choir practice attended by 61 persons, including a symptomatic index patient, 32 confirmed and 20 probable secondary COVID-19 cases occurred. Three patients were hospitalized, and two died. Transmission was likely facilitated by close proximity (within 6 feet) during practice and augmented by the act of singing. The potential for superspreader events underscores the importance of physical distancing, including avoiding gathering in large groups, to control spread of COVID-19. Enhancing community awareness can encourage symptomatic persons and contacts of ill persons to isolate or self-quarantine to prevent ongoing transmission.
- [Overall good outcome for infected pregnant women and infants](#)
In a UK population-based cohort study, the majority of pregnant women hospitalized with SARS-CoV-2 were in the late second or third trimester, supporting guidance for continued social distancing measures in later pregnancy. Most had good outcomes and transmission of SARS-CoV-2 to infants was uncommon. There was a strong association between admission with infection and black or minority ethnicity.

Healthcare Policy Recommendations

- [Immunity licenses \(passports\) can be ethically implemented](#)
JAMA: This opinion article discusses the ethics of immunity licenses, which many countries plan to implement. The U.S. is also considering implementing such a program. Ethically implementing licenses would require that the process for obtaining one be standardized, the tests upon which they are based are accurate and the activities they allow people to participate in should be based on risk. The licenses should not be more difficult to access for disadvantaged people, and they should not prevent people from doing activities permitted under current public health orders.
- [Caring for bereaved family members during and after death of a patient](#)
From a public health perspective, there is a need to expand bereavement services for the families of COVID patients in an attempt to mitigate poor bereavement outcomes such as prolonged grief disorder and psychiatric disorders. Risks for complicated grief reactions include a patient dying while intubated or with the family unable to be at the bedside, both circumstances increasing during the pandemic. The article suggests hospitals implement more palliative care tools for COVID patients and their families.
- [Pharmacists can help maintain supply of essential medications by avoiding off-label medications](#)
This opinion article outlines ways in which pharmacists can help preserve medication supplies, stem the flow of false information, and help mitigate a potential superimposed influenza outbreak. The authors note that there has been an

increase use in off-label prescription of hydroxychloroquine and other medications leading to a supply shortage. The Australian Government has placed restrictions on the prescribing of these medications and has encouraged pharmacists to limit the size of prescriptions and the over the counter distribution of these medications.

- [Psychological crisis intervention for college students](#)

Authors highlight six ways in which teachers can be supportive of students during the pandemic. They call for teachers to be "spiritual mentors" and guides, looking to support the psychological care of students. Other suggestions include to inform students daily of prevention and control measures and to pay more attention to students with financial struggles and psychological issues.

Practice Guidelines

- [Managing obsessive-compulsive disorder during COVID-19 pandemic](#)

International College of Obsessive-Compulsive Spectrum Disorders (ICOCS) and the Obsessive-Compulsive and Related Disorders Research Network (OCRN) of the European College of Neuropsychopharmacology lay guidelines for OCD treatment that include prioritizing evidence-based pharmacotherapy, temporarily modifying or pausing face-to-face CBT with exposure and response prevention. Assess suicidal risk, provide psychoeducation, inquire about Internet usage and news consumption.

- [Guidelines on diagnosing and managing COVID-19 related myocarditis](#)

The authors describe COVID-19 related myocarditis clinical findings (changes in ECG, cardiac biomarkers, impaired cardiac function), recommended diagnostic tests (cardiac MRI, cardiac CT angiography, endomyocardial biopsy), and recommended management (administration of inotropes and/or vasopressors, mechanical ventilation). The pathophysiology of this condition is thought to be a combination of direct viral injury and cardiac damage due to the host's immune response.

- [Early management proposal calls for helmet continuous positive airway pressure and prone positioning](#)

Italian researchers hypothesize that selected COVID-19 patients may benefit from a combination of early helmet continuous positive airway pressure (hCPAP) and prone position sessions, which may reduce the need for intubation and invasive mechanical ventilation, shorten the hospital length of stay, and improve survival rates. Furthermore, the need for ICU beds may be reduced, in favor of sub-tensive beds.

- [Computational models to use for predicting respiratory decompensation in hospitalized patients](#)

In this observational, retrospective cohort study on ER adult patients with COVID-19, two predictive models were developed using patient demographic and clinical data collected from 8 hospitals (N=932): a quick COVID-19 severity index (qCSI) model that uses only exam and vital sign measurements, and a COVID-19 severity index (CSI) machine learning model. The qCSI model (AU-ROC: 0.90) comprised of nasal cannula flow rate, respiratory rate, and minimum documented pulse oximetry outperformed the baseline models (illness scoring systems qSOFA: 0.76; Elixhauser: 0.70; CURB-65: AU-ROC 0.66) and was validated on an external cohort (AU-ROC: 0.82). The machine learning-based CSI had superior performance on the training cohort (AU-ROC: 0.91) but was unlikely to provide practical improvements in clinical settings. The qCSI tool is available at covidseverityindex.org.

Testing

- [LabCorp expands availability of at-home sample collection kit](#)

The nasal swab collection kit is now available to all individuals with symptoms and possible exposure to the virus, after initially limiting delivery to healthcare workers during its launch last month. The kit is listed at \$119, but some eligible customers may be able to obtain the kit with no upfront out-of-pocket costs.

- [Multi-stage group testing improves efficiency of large-scale COVID-19 screening](#)

COVID-19 testing capacity is currently restricted due to shortages of PCR testing reagents. To address this shortage, the authors propose dividing the population into small groups. Each group will provide a combined sample ('pool') to be tested. Multi-stage group testing schemes could test samples in groups of various pool sizes in multiple stages depending upon estimated disease prevalence rates. Through this approach, groups of negative samples could be eliminated with a single

test, avoiding the need for individual testing and saving resources such as PCR testing kits. The data showed group testing was more efficient than individual testing for disease prevalence rates under 30%.

- [High rate of IgG antibodies to SARS-CoV-2 among emergency department employees in Utah](#)

Testing results from 270 ED employees at University of Utah show 16 (5.9%) were positive for SARS-CoV-2 IgG antibodies, 239 (88.5%) were negative, and 15 (5.6%) had an indeterminate result. In contrast, the statewide COVID-19 case rate for Utah is 103 cases per 100,000 population (0.1%).

Drugs, Vaccines, Therapies, Clinical Trials

- [Systemic anticoagulation associated with decreased in-hospital mortality among hospitalized patients](#)

This cohort study of NYC patients (n=2,773) used a multivariate proportional hazards model to show a longer duration of anticoagulant (AC) treatment was associated with lower mortality (adjusted HR of 0.86 per day, 95% CI 0.82-0.89, p<0.001). The benefit was largest for patients receiving mechanical ventilation as hospital mortality for those receiving AC was 29.1% (median survival 21 days) vs 62.7% (median survival 9 days) for those who did not. There was also a higher risk of bleeding for ventilated patients leading the authors to conclude the risks and benefits of anti-coagulation need to be weighed.

- [Tocilizumab therapy reduced ICU admissions and/or mortality in COVID-19 patients](#)

A retrospective case-control study (n=45) in France compared the outcomes of COVID-19 treated with tocilizumab (TCZ) (n=20) and patients without TCZ (n=25). Patients treated with TCZ had a lower death and/or ICU admissions rate than patients treated without it (25% vs 72%, p=0.002), despite having a higher Charlson co-morbidity index, higher levels of oxygen therapy, and poorer biological findings.

- [Use of hydroxychloroquine and azithromycin in outpatients associated with low mortality](#)

A team led by the original French proponent of the hydroxychloroquine/azithromycin therapy issued a retrospective report without a control arm or comparison population on 1,061 COVID-19 outpatients with and without symptoms in France treated with hydroxychloroquine (HCQ) and azithromycin (AZ). The report found good clinical outcome and cure in 973 patients (91%), poor clinical outcome in 46 (4.3%) and 8 deaths (0.75%). A total of 2.3% of patients reported mild adverse events. The authors claim that administration of HCQ+AZ before COVID complications occur is safe and associated with very low fatality rate.

- [Moderna's experimental coronavirus vaccine gets FDA's 'fast track' status](#)

Moderna Inc is working on an mRNA vaccine that has been approved for "fast track" status making it eligible for "priority review", under which the FDA aims to decide on approving the drug within six months. A late phase trial is expected to start sometime in the early summer. The project had previously received \$483 million in funding from the U.S. government to accelerate development and is one of over 100 projects seeking to develop a vaccine globally.

- [Gilead partners with 5 generic drug-makers for remdesivir production](#)

Gilead Sciences Inc announced Tuesday that it signed non-exclusive, royalty-free licensing pacts with five generic drug companies (Jubilant Life Sciences Ltd, Cipla Ltd, Hetero Labs Ltd, Mylan NV, and Ferozsons Laboratories Ltd) to make and sell remdesivir in [127 countries](#), including Afghanistan, India, North Korea, Pakistan, and South Africa. The licensees will set their own prices for the generic product.

- [51 New COVID-19 trials registered today at clinicaltrials.gov](#)

Treatment trials: interferon beta 1 a, convalescent plasma, inflammasome mutations (diagnostic), severity biomarkers, inactivated vaccines, serologic antibodies, whole exome sequencing, hydroxychloroquine, prone position ventilation, T1DM experience, camera based AI triage, ibuprofen, immune response markers, elective cancer surgery, inhaled and intravenous sedation, lung ultrasound, poractant alfa, OrganiceITMFlow, ECMO, HDL, levamisole, isoprinosine, BCG vaccine, ECT, . At time of writing, a total of [1346](#) were active, [73](#) completed, and [3](#) posted results.

Other Science

- [In heart failure patients, men had higher concentrations of ACE2 than women](#)

ACE2 concentrations in men (n=1485) and women (n=537) with heart failure (index cohort) were validated in 1123 men and 575 women (validation cohort). In both cohorts, plasma concentrations of ACE2 were higher in men (estimate = 0.26, $P < 0.001$ index cohort; and 0.19, $P < 0.001$ validation cohort) than in women but use of neither an ACE inhibitor nor an ARB was associated with higher plasma ACE2 concentrations. These data might explain the higher incidence and fatality rate of COVID-19 in men.

- [SARS-CoV-2 ORF3b gene encodes a potent interferon antagonist](#)

BioRxiv preprint: The SARS-CoV-2 ORF3b gene encodes a potent interferon antagonist that can suppress the induction of type I interferon more efficiently than its SARS-CoV orthology. SARS-CoV-2-related viruses from bats and pangolins were shown to encode truncated ORF3b gene products with strong anti-interferon activity. Analyses of more than 15,000 SARS-CoV-2 sequences identify a natural variant containing a longer ORF3b reading frame. This variant was isolated from two patients with severe disease and further increased the ability of ORF3b to suppress interferon induction.

- [Sexual behavior of married couples in during the pandemic: survey](#)

A cross-sectional, cross-national survey of married couples (n=120) in South East Asia showed 45% of participants reported that the lockdown affected their sexual life, but the study concluded that there was no substantial difference in sexual activity. 50% of respondents reported having positive changes in their emotional bonding due to the lockdown.

- [Hypoactive orbitofrontal cortex in anosmia: case report](#)

Case report showing reduced metabolic activity in the orbitofrontal cortex in anosmia of COVID-19 as seen in a 18FDG PET/CT Scan, suggesting impaired neural function due to direct neurotropism of SARS-CoV-2.

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