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2020-04-30 DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING

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DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING

April 30, 2020

Executive Summary

NM residential facility deaths. NM case update. NM TriCore testing antibodies. Navajo nation cases. May 10 Navajo peak. Udall funding push. El Paso shopping discouraged. NM budget shortfall. Santa Fe furlough. Ethanol sanitizer safety. LA free testing for all. Michigan protest. NM Batelle N95 decontamination. Hospital revenue decline. Wastewater early detection. German herd immunity. 60-day viral shedding possible. Temporary infected “ark”. Prison release preparedness. Low quality research. Phased long-term care. Suicide prevention. Corticosteroid tradeoffs. Cloth mask guidelines. SARS-CoV-2 assays compared. IgG and viral loads. Better testing reporting. Dubious testing vendors. Promising oral drug. Hydroxychloroquine prophylaxis dosing. Umifenovir ineffective. Multi-drug nanoparticles. Drug discovery new targets. 38 new COVID-19 trials. Cancer research review. Attenuated SARS-CoV-2.

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

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NM Highlights

- [Residential care centers and retirement communities claiming largest percentage of NM deaths](#)
45% of NM deaths from residential facilities across the state. 50 deaths have been reported; out of those, 25 were from the Life Care Center of Farmington.
- [New Mexico reports 11 more COVID-19 deaths and 198 new cases](#)
The total positive cases and total deaths in the state are 3,411 and 123, respectively. As of today, the state has performed 67,869 tests, there are 172 individuals currently hospitalized for COVID-19, and 760 COVID-19 cases have recovered. [New NMDOH portal featuring epidemiologic breakdown of cases](#).
- [New Mexico TriCore labs will start testing people for antibodies on Monday](#)
TriCore labs will have capacity to test up to 300 people per day for antibodies starting Monday. A provider’s authorization is needed and priorities for testing include people who recovered or are suspected of having the infection and families of COVID-19 patients. These tests could be of help to governments decisions of reopening.
- [COVID-19 cases rise to 1,977 on Navajo Nation and 62 total reported deaths](#)
The Navajo Nation has reported 104 new cases of COVID-19 and two additional deaths as of Wednesday. According to the Navajo Department of Health, there are a total of 1,977 cases of COVID-19 with 62 confirmed deaths.
- [Navajo Nation infections surge and are expected to peak May 10th](#)
In a press briefing on 4/30, Indian Health Service and CDC officials described efforts to contain the virus on the Navajo Nation. Social distancing has shown to be the most challenging effort, as multigenerational families may live in the same house. Two alternative care centers have been opened in the region to care for recovering patients and two field teams have been deployed at the request of the tribal authorities.
- [Sen Udall pushes for increased testing and federal funding](#)
Udall believes the economy will not successfully reopen without appropriate testing and more national funding relief,

especially for small businesses.

- [NM Department of Health highly discourages NM residents shopping in El Paso, TX](#)

In Texas, certain non-essential businesses will be reopened on Friday. NM residents who decide to shop in El Paso are recommended to self-quarantine for 14 days. The NM state health department warns that El Paso has been hit harder than the Las Cruces area and the shoppers risk spiking cases upon their return.

- [High-profile budget items could be cut amid New Mexico's economic downturn](#)

To address New Mexico's massive budget shortfall due to plummeting oil prices and the COVID-19 outbreak, some of the high-profile budget items, such as the state's early childhood trust fund, pension reform, capital outlay projects, and pay raises, could soon be on the chopping block.

- [Santa Fe City Council voted to furlough thousands of city employees amid protests](#)

The Santa Fe City Council voted 5-4 Wednesday night to furlough thousands of city employees as one of the cost-saving measures. The furloughs are expected to save the city \$1.3 million, still leaving a \$16 million shortfall triggered by the COVID-19 pandemic and plummeting oil revenues. Lower-paid employees would be more affected by the furloughs, while higher-paid employees would receive lower furloughs.

US Highlights

- [U.S. implements restrictions on the use of ethanol in hand sanitizer, citing safety concerns](#)

On April 15th, the U.S. Food and Drug Administration issued updated guidance for limits on certain chemicals, including carcinogens, permitted in hand sanitizer. Some ethanol producers have had to halt production after the update, as they no longer met safety standards, with carcinogens detected. This move has drawn criticism from suppliers who say it will limit hand sanitizer access.

- [Los Angeles becomes first major U.S. city to offer free testing to all residents](#)

Previously, testing has only been permitted for symptomatic individuals and frontline workers. Symptomatic patients will be given priority.

- [Armed protesters in Michigan demand end to coronavirus lockdown](#)

Hundreds of angry protesters, some carrying firearms, gathered at Michigan's State Capitol in Lansing on Thursday to protest against Governor Gretchen Whitmer's request to extend the state of emergency to combat the coronavirus pandemic.

Economics, Workforce, Supply Chain, PPE Highlights

- [New Mexico receives system to decontaminate 83,000 N95 masks a day](#)

The Battelle Critical Decontamination system, which can decontaminate up to 83,000 N95 masks per day, will be in use in New Mexico starting on 5/2/20 and will remain in the state for six months. Health facilities can save unsoiled N95 masks and send them for decontamination at no cost, up to 20 times. To participate in the program, health facilities must enroll at www.battelle.org/decon.

- [Reduction in non-emergent and non-urgent care causes major revenue decline for hospitals](#)

In March, healthcare systems across the nation were urged to empty beds to prepare for a surge of virus cases. The expected surge ultimately did not occur in rural states like New Mexico. Due to the revenue reduction, over 200 American hospitals have furloughed workers. In the latest stimulus bill, lawmakers set aside \$75 billion to support struggling hospitals. \$10 billion has been specifically allocated to rural hospitals, however it is unclear if this amount will be enough.

Epidemiology Highlights

- [Wastewater testing may serve as early detection system](#)

Swiss researchers collected samples from wastewater detecting the novel coronavirus in all samples. Such tests may have the ability to predict resurgence of infections faster than diagnostic tests by about a week.

- [Controversial study on herd immunity in Germany fuels calls to reopen society](#)

A small, unpublished study in a hard-hit German town has suggested the virus is less deadly than thought and that a large fraction of the population may already be immune. Antibody and virus tests were used to assess the degree of development of herd immunity, with results suggesting levels were much higher than initially estimated. The WHO, Germany's federal disease control agency and several other health officials questioned the study's validity due to the high rate of false positives and cautioned against lifting restrictions to avoid a resurgence of cases nation-wide.

- [Case report: viral shedding for 60 Days in a woman with COVID-19](#)

A 71-year-old Chinese woman with documented viral shedding (based on reverse transcription-polymerase chain reaction (RT-PCR) testing) of SARS-CoV-2 for 60 days from the onset of symptoms (55 days from her first positive test and 36 days after complete resolution of symptoms). This is the longest duration of viral shedding reported to date. This case demonstrates that viral shedding after COVID-19 diagnosis can be prolonged.

Healthcare Policy Recommendations

- [Temporary “ark” hospitals in Wuhan as a successful model of controlling COVID-19](#)

The study (n=1,124) focused on highlighting how TAHs operate via one TAH with 800 beds in Wuhan as the primary example. 833 patients were cured and discharged, 291 transferred to other hospitals owing to aggravation of their condition. The goal is to have zero infection for medical staff, zero in-hospital deaths among admitted patients, and zero readmission for discharged patients. The successful model of TAH would rapidly and effectively control the spread of COVID-19 in other cities.

- [Prison release requires community preparedness](#)

Release of incarcerated following US Attorney General Barr's order poses increased risk of drug overdose and cardiovascular disease in two weeks following release. Those at risk should have pre-arranged follow up health appointments as well as the means to engage in telehealth visits.

- [Warning on low COVID-19 research quality: triage low-quality research efforts](#)

Regulatory agencies and public health authorities should play a leading role in identifying studies that meet strict standards. They should avoid making public recommendations or granting emergency use authorization for interventions whose clinical merits remain to be established and, instead, present clinical trials as a mechanism for addressing uncertainty without compromising patient interests.

- [A three-phase approach to long term care and post-acute care](#)

Journal of the American Geriatrics Society: The University of Washington Medicine's Post-Acute Care Network developed a three-phase approach —Initial, Delayed, and Surge phases— to help slow disease spread and help decrease the burden placed on local medical systems and skilled nursing facilities. The initial phase includes optimizing communication, testing and tracking the target population and planning for outbreaks. The delayed phase aims to provide consistent education and reinforces infection prevention and control practices to staff to slow down disease spread. The surge phase plans on deploying a “drop team” within 24 hours in response to an outbreak at a facility.

- [New mental health and suicide prevention response](#)

The National Action Alliance for Suicide Prevention and CDC launched a suicide prevention response following a recent Gallup survey stating that 48% of Americans identified that their mental health would suffer before the end of social and physical restrictions. The response will include disseminating information with best practices to improve mental health as well as uniting efforts to send support to communities.

Practice Guidelines

- [Risks and benefits of inhaled corticosteroids for severity of disease remains inconclusive](#)

A systematic review found that there is currently no evidence whether pre-morbid use or continued administration of inhaled corticosteroids has adverse or beneficial outcomes in acute respiratory infections due to coronavirus. Patients with asthma and COPD who are stable while using inhaled corticosteroids should continue on their treatment.

- [Guidelines on how to properly wear a cloth mask in public](#)

Many citizens are concerned that people are wearing masks incorrectly. According to the WHO, the mask should fit snugly without any gaps. Masks should also cover all of the nose and below the chin. Hands should also be washed prior to putting the mask on.

Testing

- [Comparison of four assays for SARS-CoV-2 detection in nasopharyngeal specimens](#)

The authors evaluated the analytical sensitivity and clinical performance of four SARS-CoV-2 molecular diagnostic assays granted Emergency Use Authorization by the FDA using nasopharyngeal swabs from symptomatic patients: the New York SARS-CoV-2 Real-time Reverse Transcriptase (RT)-PCR Diagnostic Panel (Modified CDC), the Simplexa COVID-19 Direct (Diasorin Molecular), GenMark ePlex SARS-CoV-2 assay (GenMark) and the Hologic Panther Fusion(R) SARS-CoV-2 assay (Hologic). Agreement among assays was high ($\kappa = 0.96$), and three of four assays detected all 51 positive cases (96% for GenMark). The Diasorin and Hologic assays had lower detection limits than the other two.

- [Viral loads remain detectable despite presence of IgG antibodies](#)

In this small clinical study antibody generation and virus clearance were examined in 26 patients with COVID-19. It was shown that SARS-CoV-2 could coexist with virus-specific IgG antibodies (immune response markers) in COVID-19 patients for an unexpectedly long time. Without adaptive immunity, innate immunity may still be powerful enough to eliminate SARS-CoV-2. Four out of 26 patients had detectable viral loads with concurrent IgG antibodies at 35 days post illness and 2 patients had detectable viral loads 50 days post illness with concurrent IgG antibodies. The long-term coexistence of IgG with SARS-CoV-2 in the human body raises the question of whether patients with antibodies are still at risk for reinfection.

- [Controversies of reporting COVID-19 testing results: opinion of a leading UK statistician](#)

The Department of Health and Social Care publishes the number of patients tested for coronavirus and the number of positive tests. A member of the Royal Statistical Society's covid-19 task force said the reporting lacks details on testing dates, repeated testing and demographics that could lead to serious misrepresentation of the pattern of the epidemic.

- [FDA's lax rules on coronavirus blood tests open U.S. market to dubious vendors](#)

FDA's decision last month to allow any company to sell antibody tests in the United States without prior review by the agency has opened the market for American firms with no background or established competency in medical testing.

Drugs, Vaccines, Therapies, Clinical Trials

- [New orally taken drug with broad-spectrum antiviral activity shows promise in mouse and human airway epithelial cell culture study](#)

Researchers developed an oral ribonucleoside analog (beta-d-N4-hydroxycytidine, NHC) that has broad-spectrum antiviral activity against SARS-CoV-2, as well as increased potency against a CoV bearing resistance mutations to remdesivir. NHC and remdesivir may select for exclusive and mutually sensitizing resistance pathways.

- [Finding the dose for HCQ prophylaxis for COVID-19: simulation study](#)

The authors explored possible HCQ prophylactic dosing regimens through simulation by optimizing exposures above the in vitro generated half maximal effective concentration (EC50). For PrEP, to maintain weekly troughs above EC50 in >50% of subjects, an 800 mg loading dose followed by 400 mg twice or three times weekly is required. For PEP, 800 mg loading dose followed in 6 hours by 600 mg, then 600 mg daily for 4 more days achieved daily troughs above EC50 in >50% subjects. These doses are higher than recommended for malaria chemoprophylaxis, and clinical trials are needed.

- [Umifenovir treatment not associated with improved outcomes at Wuhan hospital](#)

In a retrospective study performed in a non-ICU ward in Jinyintan Hospital, 81 COVID-19 patients were divided into a umifenovir group and a control group, with similar baseline clinical and laboratory characteristics between groups. 73% of patients in umifenovir group and 77% of the control group tested negative for the virus within 7 days of admission. No deaths/severe adverse reactions were seen in either group.

- [Multi-drug nanoparticles could be used to mitigate inflammation](#)

(Mouse study): New nanoparticles capable of selectively delivering adenosine and antioxidants together show potential in the treatment of acute inflammation associated with COVID-19.

- [Two new sets of pharmacological agents display antiviral activity](#)

Nature: The authors identified 332 high-confidence SARS-CoV-2-human protein-protein interactions. Of these, 66 druggable human proteins or host factors targeted by 69 drug compounds (29 FDA-approved drugs, 12 drugs in clinical trials, and 28 preclinical compounds) were identified. Viral assays revealed two sets of pharmacological agents (mRNA translation inhibitors and predicted regulators of Sigma1 and Sigma2 receptors) that displayed antiviral activity. Within these two sets are at least five targets and over ten different chemotypes, suggesting a rich landscape for optimization.

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

Treatment trials: RNA vaccine, serological responses in HCWs, methylene blue, serological response in hospital employees, organ health, XPro1595 treatment, hydroxychloroquine, ozone auto-hemotherapy, nanoparticle vaccine, C5a receptor expression, seroconversion of HCWs and patients, HCQ chemoprophylaxis in HCWs, management during home isolation, HCQ treatment, anxiety/depression, telerehabilitation, lung ultrasound, telemedicine for diabetic patients, epidemiological research, risk stratification score, ravulizumab, biomarkers in kidney transplant patients, BCG vaccine, treatment efficacy, predict morality/severity, azithromycin prophylaxis in cancer treatment, stroke management, cardiovascular events, sleep quality, ARDS, psychological/social/economic impact, obstetric/perinatal outcomes, radiographic findings, reducing anxiety, manipulation of ventilation/perfusion, breath regulation for calm, manual ventilation vs. Conventional vent, prenatal care. At time of writing, a total of [1053](#) were active, [48](#) completed, and [3](#) posted results.

Other Science

- [A systematic review of cancer patient research during COVID-19 pandemic](#)

Critical Reviews in Oncology/Hematology: A systematic review of 88 papers published between December and April compiles information on COVID-19 disease characteristics/outcomes in cancer patients, the effect of cancer therapy on COVID-19 patients, and strategies for risk reduction. The authors conclude that a dynamic approach must be taken for treatment.

- [Importance of naturally attenuated Sars-Cov-2 in the fight against COVID-19](#)

An international group of authors theorize that knowledge of naturally emerging attenuated SARS-CoV-2 variants that are correlated with asymptomatic outcomes and high infection rates is of key interest in pandemic control.

Contributing team members: Christophe G. Lambert, Shawn Stoicu, Lori Sloane, Anastasiya Nestsiarovich, Praveen Kumar, Nicolas Lauve, Emma Wolinsky, Fiona Nguyen, Ryen Ormesher, Melissa Cossé, Lauren Tagliaferro Epler, Timothy Campbell, Aly Raboff, Hannah Dowdy-Sue, John Powell, Ariel Hurwitz, Alexandra Yingling, Perez Olewe, Gregory Mertz, Kristine Tollestrup, Orrin Myers, Douglas J. Perkins.