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

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UNM GLOBAL HEALTH COVID-19 BRIEFING

May 19, 2020

Executive Summary

NM Highlights: Navajo Nation. Reopening guidelines for employers. COVID Updates. Prison cases. Capitol budget faces \$100M shortfall. Health Secretary warning to Lea County. APS Budget shortfall. Statewide testing site locations. UNM scientists work to develop vaccine.

US Highlights: WHO funding suspended.

International Highlights: China déjà vu lockdown. EU resolution adopted for investigation.

Epidemiology: Wastewater used to detect outbreaks. Discharged COVID patients not infectious.

Healthcare Policy Recommendations: Disability rights consideration.

Practice Guidelines: Guidelines on safe extubation and COVID-19 –related rash classification.

Testing: Sputum sample better than nasopharyngeal.

Drugs, Vaccines, Therapies, Clinical Trials: NIH partners with other agencies. Low-dose HCQ reduces fatality. Hydroxychloroquine no benefit. Moderna's vaccine criticized. 44 new COVID-19 trials registered.

Other science: RAAS inhibitors. Biomarkers for disease severity. Immunosuppression and immunodeficiency link. Virtual clinical exams for students. Postoperative mortality. Improved quarry environment.

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

- [Navajo Nation has highest infection rate per capita in U.S](#)
Navajo nations have 2,304 cases per 100,000 people compared to 1,806 cases per 100,000 in New York. The Nation has reported nearly 4,000 COVID-19 cases in a population of 175,000. President Nez says factors such as multiple generations living in one household, 30-40% of families lacking water, and food deserts have increased spread for Navajo Nation. Currently a strict stay at home order is in place.
- [State report outlines reopening rules for New Mexico employers](#)
A 47-page report released by the New Mexico Department of Health provides guidance for business to reopen safely.
- [NM reports 6 more COVID-19 deaths and 104 additional cases on May 19](#)
As of today (5/19), the total positive cases and total deaths in the state are 6,192 and 276, respectively. The state has performed 142,246 tests, there are 204 individuals currently hospitalized for COVID-19, and 1,882 COVID-19 cases have recovered. [NMDOH portal featuring epidemiologic breakdown of cases](#).

- [21 state prisoners test positive for COVID-19](#)

The New Mexico Corrections Department announced Monday that 21 state prisoners at the Otero County Prison Facility in Chaparral have tested positive for COVID-19, and one has been sent to a hospital in El Paso. The department administered 133 more tests Friday, with 20 new positive cases. The remaining 112 were negative and one test is still pending.

- [Santa Fe faces \\$100M deficit in FY21 amid COVID-19 pandemic](#)

Due to COVID-19 outbreak, many big-money events, such as the Santa Fe Indian Market, the Traditional Spanish Market, the International Folk Art Market and the Santa Fe Opera's summer season, were cancelled this year. Tourism in Santa Fe also got affected. The city of Santa Fe is projecting around \$100 million shortfall, which represents about 30% of the city's total budget. City officials said a "worst-case estimate" would feature a \$150 million deficit, triggered by a potential second outbreak of the virus in the fall.

- [NM health secretary warns Lea County manager](#)

Lea County Manager Mike Gallagher said last week that businesses in the county will open when business owners decide the timing is right. He was warned about possible legal action for his statement as it directly violates state law and undermines the rule of law.

- [APS announces \\$6.673 million in budget cuts, tentative start date](#)

Departments at City Center were asked to reduce their budgets by 10%. Vacancies will go unfilled, contract services will be reduced, a travel ban and hiring freeze are in place, according to APS. All APS schools will tentatively start on Aug. 12 in the coming school year, and only three will continue on an extended learning calendar – Hawthorne, Los Padillas, and Whittier elementary schools. The budget is expected to be revised after a special legislative session.

- [List and map of New Mexico COVID-19 testing sites provided](#)

The New Mexico Department of health provides a map of testing sites along with hours of operation, and how to schedule.

- [UNM scientists work to develop coronavirus vaccine](#)

David Peabody, Ph.D., a professor of molecular genetics and microbiology, and his colleague, Bryce Chackerian, Ph.D., are spearheading the project to develop a new vaccine to combat the coronavirus. The idea is to create a virus-like particle that triggers the creation of anti-bodies which would, in turn, protect the body from COVID-19. They were given a \$250,000 grant to make the vaccine. They're also working with several other departments at the university to make this happen.

US Highlights

- [Trump releases text of letter to WHO with alleged failings that prompted funding freeze](#)

Trump is suspending the funding to the WHO in a [letter](#) to Dr. Tedros. Science commentary describes withholding funding to WHO as unhelpful and unjustified, while acknowledging some valid criticisms.

International Highlights

- [Re-opening: 100 Million in China under lockdown again](#)

Bloomberg: Reversal of the re-opening taking place in China's northeast region. In Jilin province, they have cut off trains and buses, shut schools and quarantined tens of thousands of people. Strict measures have dismayed many residents who had thought the worst was over. China's swift and powerful reaction reflects its fear of a second wave after it curbed the virus's spread at great economic and social cost. It's also a sign of how fragile the re-opening process will be in China and elsewhere.

- [EU resolution on pandemic adopted at WHO assembly: official](#)

Reuters: None of the 194 countries opposed the proposal to investigate the global response to COVID-19.

Epidemiology Highlights

- [Early SARS-CoV-2 outbreak detection by sewage-based epidemiology](#)

Sewage Epidemiology or Waste Based Epidemiology (WBE) approach has been successfully used to track and provide early warnings of outbreaks of pathogenic viruses such as hepatitis A, poliovirus and Norovirus. In untreated wastewater, COVID-19 (excreted via feces then introduced to wastewater) can survive from hours to days. Detection of COVID-19 can be carried out with nucleic acid-based polymerase chain reaction (PCR) assay and used for confirmation of COVID-19 patients around the globe. New cheaper and faster monitoring tools are being developed to detect COVID-19 in wastewater by biosensors, ELISA, or paper-based indicator methods.

- [COVID patients testing positive after recovery aren't infectious](#)

Scientists from the Korean Centers for Disease Control and Prevention studied 285 COVID-19 patients testing positive after being discharged from isolation. Contact tracing found that no new cases resulted solely from contact with these re-positive patients. Virus isolation in cell cultures of respiratory samples were negative. As a result of the findings in the study, revised protocols should not require people to test negative for the virus before returning to work or school after they have recovered from their illness and completed their period of isolation.

Healthcare Policy Recommendations

- [Crisis triage protocols should optimize health outcomes and disability rights](#)

Crisis triage protocols should seek to optimize health outcomes and disability rights. Protocols should explicitly protect core values, such as the equal moral worth of all people, including those with disabilities. Disability rights advocates and health care leaders should work together to finalize crisis triage plans that save the most lives, protect the equal worth of all persons, and enhance communities' capacity to heal.

Practice Guidelines

- [Minimizing droplet and virus spread during and after tracheal extubation](#)

The authors propose a surgical mask to be placed on the patient's face before removing the tracheal tube, and be left on during transportation, and staying in post-anesthesia recovery room and in the ward. A video demonstration is included.

- [Algorithm for classification of COVID-19 rashes](#)

Up to a 20% of COVID-19 patients have skin manifestations such as erythematous rash, petechiae, vesicles, acral ischemia, livedo reticularis, and widespread urticaria. When examining patients with generalized exanthem from COVID-19, the first step is to look for the presence of vesicles or secondary erosions with crusts. If absent, a blanching component can be assessed by pressing the affected area for several seconds. Non-blanching generalized rashes composed of small red macules are indicative of a rash with petechiae. An acral distribution of non-blanching violaceous lesions is indicative of acral ischemia. A reticulated vascular pattern indicates livedo reticularis. For blanching rashes, the next step is to scratch the skin. Dermographism would manifest as linear wheals at sites of scratching and indicate urticarial rash while its absence indicates erythematous rash. A flashlight photo after each step may be taken.

Testing

- [Sputum testing outperforms nasopharyngeal swab testing: Systematic review and meta-analysis](#)

Preprint: Compared to nasopharyngeal swab sampling; sputum testing resulted in significantly higher rates of SARS-CoV-2 RNA detection while oropharyngeal swab testing had lower rates of viral RNA detection. Less invasive and more acceptable sputum testing should be considered as the primary method for diagnosis and monitoring.

Drugs, Vaccines, Therapies, Clinical Trials

- [NIH is partnering with other agencies to develop a coordinated research response: JAMA viewpoint](#)

JAMA: On April 3, leaders of the NIH met with multiple leaders of research and development from biopharmaceutical firms, along with leaders of the FDA, BARDA, EMA, and academic experts and decided to form a public-private partnership to focus on speeding the development and deployment of therapeutics and vaccines for COVID-19. The group assembled 4 working

groups to focus on preclinical therapeutics, clinical therapeutics, clinical trial capacity, and vaccines. On April 17, the NIH-led Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV) partnership was formally announced. The main goals of ACTIV are to establish a collaborative framework for prioritizing vaccine and therapeutic candidates, to streamline clinical trials and tap into existing clinical trial networks, and to coordinate regulatory processes and leverage assets among all partners. NIH Director, Dr. Francis Collins, discusses the agency's efforts in this [video](#).

- [Low dose HCQ reduces fatality of critically ill with COVID-19: Wuhan retrospective study](#)

In this retrospective study 550 Wuhan critically ill COVID-19 patients received comparable basic treatments including antiviral drugs and antibiotics, and 48 of them were treated with oral HCQ treatment (200 mg twice a day for 7-10 days) in addition to the basic treatments. Fatalities were 18.8% (9/48) in HCQ group, which is significantly lower than 47.4% (238/502) in the Non-HCQ group ($P < 0.001$). The time of hospital stay before patient death is 15 (10-21) days and 8 (4-14) days for the HCQ and NHCQ groups, respectively ($P < 0.05$). The levels of inflammatory cytokine IL-6 were significantly reduced from 22.2 (8.3-118.9) pg/mL at the beginning of the treatment to 5.2 (3.0-23.4) pg/mL ($P < 0.05$) at the end of the treatment in the HCQ group but there is no change in the NHCQ group. These data suggest that addition of HCQ on top of the basic treatments could be effective in reducing the fatality of critically ill patients of COVID-19 through attenuation of inflammatory cytokine storm.

- [Hydroxychloroquine- no benefit and higher adverse events: systematic review and meta-analysis](#)

MedRxiv: Analyses based on three RCT and 8 observational studies ($n = 2354$) showed no improvement in clinical progression, mortality, or viral clearance by RT PCR among patients treated with hydroxychloroquine. The incidence of adverse events was significantly higher with hydroxychloroquine (OR: 4.1, CI: 1.42 to 11.88; $p = 0.009$). The meta-analysis included the low-dose Wuhan retrospective study described above.

- [Early data on Moderna's COVID-19 vaccine critiqued: Stat News](#)

StatNews: Moderna announced promising results in their vaccine. Stat News health experts say Moderna did not provide enough data regarding participants' ages, and responses to the vaccine from other participants in the 45-subject study while only reporting 8 results, and length of immunity.

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

Treatment trials: ARBs, rivaroxaban followed by enoxaparin/unfractionated heparin, enoxaparin, ABX464, silymarin, hydroxychloroquine, imatinib, ullinastatin, EDP1815, dapagliflozin, ambrisentan, cyclosporine, povidone-iodine, baricitinib, favipiravir and hydroxychloroquine, convalescent plasma, lopinavir and ritonavir, LMWH, ivermectin, vitamin D, stem cell. At time of writing, a total of [1515](#) were active, [83](#) completed, and [3](#) posted results.

Other Science

- [RAAS inhibitors have no associated risk of severe COVID-19: retrospective study](#)

Lancet: In this case-population retrospective study, Spanish patients ($N = 1,139$) requiring admission to hospital were studied. As a reference group, the authors randomly sampled ten patients per case, individually matched for multiple characteristics ($N = 11,390$). Compared with users of other antihypertensive drugs, users of RAAS (Renin-angiotensin-aldosterone system) inhibitors had an adjusted OR for COVID-19 requiring admission to hospital of 0.94 (95% CI 0.77-1.15). No increased risk was observed with either angiotensin-converting enzyme inhibitors or angiotensin-receptor blockers.

- [Risk factors for severe COVID-19: systematic review and meta-analysis](#)

MedRxiv preprint: The following factors were associated with risk of severe COVID-19: elevated C-reactive protein (OR = 6.46; 95% CI, 4.85 - 8.60), decreased lymphocyte count (OR = 4.16; 95% CI, 3.17 - 5.45), cerebrovascular disease (OR = 2.84; 95% CI, 1.55 - 5.20), chronic obstructive pulmonary disease (OR = 4.44; 95% CI, 2.46 - 8.02), diabetes mellitus (OR = 2.04; 95% CI, 1.54 - 2.70), hemoptysis (OR = 7.03; 95% CI, 4.57 - 10.81), and male sex (OR = 1.51; 95% CI, 1.30 - 1.75).

- [Association between immunosuppression and immunodeficiency and COVID-19](#)

A meta-analysis of 8 studies ($n = 4007$ patients) showed that immunosuppression and immunodeficiency were associated with a 3.29-fold and 1.55-fold, respectively, increased risk of severe COVID-19 disease, although the statistical differences were not significant

- [Objective structured clinical examination \(OSCE\): from exam room to Zoom breakout room](#)

The University of Utah Medical School conducted student OSCEs virtually rather than the traditional in-person format. They found it allowed for adequate assessment of history, clinical reasoning, clinical testing, documentation, and communication. Proctors were unable to assess student ability to accurately perform physical exam maneuvers. The school will continue with this format for future OSCEs during the pandemic. (Article behind paywall (Wiley))

- [High rates of postoperative mortality among undiagnosed COVID-19 patients](#)

A perioperative reports review was performed on 64 COVID-19 carriers, of whom 51 were diagnosed in the postoperative period. There was 27.5% postoperative mortality rate among those with COVID-19, severe mostly pulmonary complications, and medical staff exposure and transmission. The authors conclude the results show unacceptable mortality rates and high rates of severe complications.

- [Environmental improvements over stone quarrying and crushing areas during lockdown](#)

The study explored the impact of lockdown on environmental components like particulate matter (PM) 10, land surface temperature (LST), river water quality, noise using image and field data prior to and during lockdown. Results exhibit a decrease in PM 18 days after lockdown in selected rock clusters. LST is reduced by 3–5 °C, noise level is dropped to <65dBA which was above 85dBA in stone crusher dominated areas in pre-lockdown period. Adjacent river water qualitatively improved due to stoppage of dust release to the river.

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