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2020-05-02/03 DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING

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DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING

May 2-3, 2020

Executive Summary

More NM cases. Free Shiprock testing. Prison release demands. 8 state parks reopen. Higher US deaths. NY PPE case dismissed. Orthopedic Tx down. European deaths down. UK mortality factors. People leaving large cities. Ending lockdown strategies. Public mask impact. Taiwan tracing. Homeless shelter prevalence. Homeless shelter outbreak. 50-state R0. COVID-19 decades later. US county tracking site. Hospital management model. COVID-19 behavioral transformation. Practice guidelines for: cardiology, IBD surgery, and rheumatic physical inactivity. Roche antibody test approved. Abbott antibody test EU-certified. Home anosmia assessment. CVD and ACE/ARBs. Tocilizumab early evidence. Tocilizumab systematic review. WHO vaccines trial. HCQ slower viral clearance. CBC predicts severity. Kidney disease meta-analysis. Innate/adaptive immunity timing. Combating misinformation. Mental health living reviews.

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 more COVID-19 deaths and 118 new cases on Sunday according to partial report](#)
[New Mexico reported 220 additional positive cases and 8 more deaths on Saturday](#). As of Sunday (5/3), the total positive cases and total deaths in the state are 3,850 and 151, respectively. The state has performed 77,977 tests, there are 164 individuals currently hospitalized for COVID-19, and 832 COVID-19 cases have recovered. [New NMDOH portal featuring epidemiologic breakdown of cases](#).
- [NM DOH to provide free coronavirus testing in Shiprock](#)
Drive-thru testing is to be provided on May 4 and 5 from 9am-1pm at Shiprock High School. Those eligible for testing include those with symptoms such as fever, cough, chills, shortness of breath, essential workers such as healthcare workers, first responders, public works and grocery store employees as well as contacts of household members of New Mexico residents who have tested positive and/or anyone who has traveled within the last 14 days to areas with community spread. All eligible people can be with or without symptoms and still qualify to be tested.
- [Advocacy groups demand people be released from prisons, jails and immigration detention facilities](#)
Advocacy groups continue to hold rallies at NM detention centers/correctional facilities, demanding people be released to prevent the spread of COVID-19. They argue that the close living quarters are dangerous for the entire state as detention workers will also be exposed and take the disease to their homes and communities.
- [Eight state parks plan to reopen Friday](#)
Eight state parks plan to reopen Friday: Cimarron Canyon, Ute Lake, Brantley Lake, Sumner Lake, Caballo Lake, Cerrillos Hills, Storrie Lake and Villanueva. The parks that are opening are opening for day-use only, no camping is allowed. There will also be capacity limits that differ depending on the park and social distancing guidelines in place. Entrance fees will be waived until May 15 to minimize person-to-person interaction.

US Highlights

- [U.S. reported highest COVID-19 deaths in 24 hours as states begin to reopen](#)
According to the data collected as of 4 a.m. ET on Friday, the U.S. saw 2,909 people die of Covid-19 in 24 hours, the highest daily Covid-19 death toll in the U.S. yet. The country's deadliest day comes as state officials weigh reopening parts of the economy and easing stay-at-home orders.
- [U.S. court dismisses NY nurses' lawsuit against Montefiore Medical Center for COVID-19 protection](#)
The New York State Nurses Association (NYSNA) claimed the hospital was ignoring requirements that healthcare workers receive an N95 respirator mask daily. The case was dismissed because the U.S. District Judge said he lacked authority to address the nurses' concerns. Montefiore has since given nurses a fit-tested N95 mask daily, restored their sick days and expanded testing.

International Highlights

- [Drastic cutback in orthopedic healthcare services in Germany, Austria and Switzerland](#)
Orthopedic healthcare services in Austria, Germany, and Switzerland are suffering a drastic cutback due to COVID-19. An online survey was performed of orthopedic surgeons in the German-speaking Arthroscopy Society (N=1,399 responders). 10-30% of the participants stated that arthroscopic procedures were still being performed at their center, but only 6.2% stated that elective total joint arthroplasty was still being performed. In addition, physical rehabilitation and surgeons' postoperative follow-ups were severely affected.
- [France, Spain and Italy record lowest daily death tolls for weeks](#)
France reported 135 deaths; Spain's 164 were the lowest since mid-March; and Italy's 174 was a two-month low. France no longer requires isolation from EU countries, the Schengen area, or the UK.
- [Mortality of covid-19 patients admitted in UK hospitals](#)
Being obese, male, or elderly reduces chance of survival. Of the admitted patients, 49% of patients were discharged alive, 33% have died, and 17% continued to receive care. The study found a high death rate among patients who received ward care without being admitted to critical care—55% were discharged alive, 31% died, and 14% remain in hospital.

Economics, Workforce, Supply Chain, PPE Highlights

- [Pandemic causing people to move from big cities](#)
CNN report: Pandemic could change how we view living in big cities. Epidemics have made people move away from urban to country settings. While NY governor claims the density of the city allows for virus to spread, other's point out that other major cities (Tokyo, Seoul, Vancouver) are not seeing the same numbers.
- [Possible strategies to determine how and when to end lockdown](#)
Preprint: The optimal strategy based on a SEIR-type model is broadly found to be to release approximately half the population two-to-four weeks from the end of an initial infection peak, then wait another three-to-four months to allow for a second peak before releasing everyone else. The two quantities most critical in determining the optimal solution are transmission rate and the recovery rate, where the latter is defined as the fraction of infected people in any given day that then become classed as recovered.

Epidemiology Highlights

- [Community-wide impact of face mask use by the public](#)
Face masks are found to be useful with respect to both preventing illness in healthy persons and preventing asymptomatic transmission. 80% adoption of moderately (50%) effective masks could prevent on the order of 17–45% of projected deaths over two months in New York, while decreasing the peak daily death rate by 34–58% absent other changes in epidemic dynamics.

- [High transmissibility of COVID-19 before and after symptom onset: Taiwan's tracing study](#)

This prospective case-ascertained study in Taiwan analyzed 100 COVID-19 patients and 2761 their contacts. The overall secondary clinical attack rate was 0.7% (95% CI, 0.4%-1.0%). The attack rate was higher among the 1818 contacts whose exposure to index cases started within 5 days of symptom onset (1.0% [95% CI, 0.6%-1.6%]) compared with those who were exposed later (0 cases from 852 contacts; 95% CI, 0%-0.4%). Because high transmissibility of COVID-19 before symptom onset suggests that finding and isolating symptomatic patients alone may not suffice to contain the epidemic, and more generalized measures, such as social distancing, may be required.

- [SARS-CoV-2 prevalence in homeless shelters: four U.S. Cities](#)

COVID-19 testing took place in 19 homeless shelters in different states obtaining the data on 1,192 residents and 313 staff members. When testing followed identification of a cluster, high proportions of residents and staff members had positive test results for SARS-CoV-2 in Seattle (17% of residents; 17% of staff members), Boston (36%; 30%), and San Francisco (66%; 16%). Testing in Seattle shelters where only one previous case had been identified in each shelter found a low prevalence of infection (5% of residents; 1% of staff members). Among shelters in Atlanta where no cases had been reported, a low prevalence of infection was also identified (4% of residents; 2% of staff members). Community incidence in the four cities (the average number of reported cases in the county per 100,000 persons per day during the testing period) varied, with the highest (14.4) in Boston and the lowest (5.7) in San Francisco

- [COVID-19 Outbreak Among 3 Homeless Service Sites, King County, WA](#)

In this outbreak, testing events for everyone in the shelter identified a high proportion (86%) of COVID-19 cases and allowed for prompt transfer to isolation housing. After infection was reported in one of the homeless shelters, measures were undertaken through March in 3 shelters, including testing for SARS-CoV-2 (N=181, 10.5% were positive), site assessments and symptom screening, isolating ill residents and staff members, reinforcing infection prevention and control practices, providing face masks, and advise on sheltering-in-place.

- [Effective reproduction number as a measure of public health intervention](#)

JAMA: The authors request that the CDC regularly report the effective reproduction number for each of the 50 states in the US. The effective reproduction number, R_t , determines the potential for epidemic spread at a specific time t under the control measures in place. R_t can be used to evaluate the effectiveness of public health interventions if it is quantified in different settings at frequent intervals.

- [Human population will continue to be the viral host](#)

(Opinion): If the pandemic does not stop, in a few decades the virus will continue to be in circulation. The authors predict SARS-CoV-2 will become as safe as that of other acute non-severe viral infections that have previously infected humans, causing low mortality. The authors also provide a summary of the virus-host relationship.

- [Tracking county level data using an open source, interactive and real-time program](#)

CovidCounties.org, an interactive web application that depicts daily disease trends at the level of US counties using time series plots and maps. This application (and underlying code) is open source and includes a manually curated dataset of public policy actions made at the state-level.

Healthcare Policy Recommendations

- [A mathematic model can assist hospital managers to control the hospital workflow](#)

A simple computational model is developed to mimic the workflow of an average hospital during a pandemic crisis. The goal is to assist management in anticipating the load of each care unit, such as the ICU, or ordering supplies, such as PPE, and to retrieve key parameters that measure the performance of the health system. The model was fitted with good accuracy to France's data set that gives information on hospitalized patients and is provided online by the French government.

- [Nature reviews behavioral and social research relevant to COVID-19 response](#)

Nature human behavior: The authors discussed research on threat perception, social context, science communication, aligning individual and collective interests, leadership, and stress and coping. Article previously covered in depth when

released as preprint in our [April 19th briefing](#). Highlights include: • A shared sense of identity or purpose can be encouraged by addressing the public in collective terms and by urging “us” to act for the common good. • Identifying sources (e.g., religious or community leaders) that are credible to different audiences to share public health messages can be effective. • Norms of prosocial behavior are more effective when coupled with the expectation of social approval and modeled by in-group members who are central in social networks. • Leaders and members of the media should highlight bipartisan support for COVID-related measures as such endorsements in other contexts have reduced polarization and led to less biased reasoning. • Preparing people for misinformation and ensuring they have accurate information and counterarguments against false information before they encounter conspiracy theories, fake news, or other forms of misinformation, can help ‘inoculate’ them against false information. • Use of the term “social distancing” might imply that one needs to cut off meaningful interactions. A preferable term is “physical distancing,” because it allows for the fact that social connection is possible even when people are physically separated.

Practice Guidelines

- [COVID-19 information for cardiologist: systematic review](#)

A systematic review summarizes the data on COVID-19 useful for cardiologists with the following highlights: 1) Cardiac manifestations in COVID-19 patients are: myocardial injury, myocarditis, arrhythmia, venous thrombosis and heart failure. 2) If a patient has shared a room with other patients before being identified as infected with COVID-19, all patients who shared a room with that person are considered to be isolated for at least 14 days unless SARS-CoV-2 infection is ruled out. 3) In addition to PPE, it is imperative that devices, including ultra-sound equipment, are cleaned and disinfected. Useful guidelines are referred to.

- [Inflammatory Bowel Disease surgery: international recommendations](#)

International Organization for the Study of Inflammatory Bowel Disease provides recommendations for surgery in patients with IBS. Ulcerative colitis patients with high-grade and low-grade dysplasia may be delayed in the short-term, but special attention should be considered by the multidisciplinary tumor board since the risk of synchronous cancer at immediate colectomy can be up to 42% and 19% respectively. Invasive colon and rectal cancer in the setting of asymptomatic or mild symptomatic ulcerative colitis, should be treated as a non-elective procedure, considering patients symptoms, and metastatic workup. There is no contraindication for the use of minimally invasive surgery for COVID-19 patients, but risks and benefits must be discussed with the operative team. The liberal use of temporary fecal diversion is suggested to minimize the risk of septic complications because overwhelmed hospital systems likely have a diminished capacity to rescue ill patients.

- [Researchers caution against physical inactivity for patients with rheumatic disease](#)

Self-isolation and quarantine requirements lead to decreased physical activity; however, exercise is major component of treatment for patients with rheumatic diseases and is associated with including maintained physical capacity/ functionality, decreased disease acuity, decreased obesity and insulin resistance, and an improved quality of life. Patients living with rheumatic disease could have a reversal of all the benefits of exercise should their activity levels decrease, and these individuals should receive additional support during this time and avoid prolonged periods of time spent sitting.

Testing

- [Roche's antibody test approved by FDA](#)

Roche aims to produce over 100 million tests per month by the end of the year. The test has a specificity rate exceeding 99.8% and sensitivity of 100%.

- [Abbott's antibody test is certified by EU](#)

Thousands of tests are being shipped to public health organizations in the UK for validation. The test demonstrated specificity and sensitivity of greater than 99% in patients that have had symptoms for 14 or more days. [An Idaho study](#) showed that the specificity was >99.90% and the sensitivity was 100%.

- [Validation of self-administered home evaluation of olfactory and gustatory test](#)

COVID-19 patients (n=33) underwent a self-administered chemo sensitive test the day before the control swab. On this

occasion, the patients underwent operator-administered validated tests. The differences between the results of the two tests were not significant for both the olfaction (P = 0.201) and the taste (P = 0.180).

Drugs, Vaccines, Therapies, Clinical Trials

- [Cardiovascular disease, ACE/ARB therapy and mortality in Covid-19](#)

Data on 8910 patients hospitalized with a diagnosis of COVID-19 were analyzed. Cardiovascular disease was associated with an increased risk of in-hospital death. Neither the use of angiotensin-converting-enzyme inhibitors nor the use of angiotensin-receptor blockers was associated with an increased risk of in-hospital death.

- [Tocilizumab in severe COVID-19: preliminary weak evidence of effectiveness](#)

Preliminary data from a small (N=21) single arm retrospective study show that tocilizumab (IL-6 receptor blocker) adjunctive to the standard care improved clinical outcomes (symptoms, hypoxemia, and CT opacity) immediately in severe and critical COVID-19 patients. The authors conclude that Tocilizumab is an effective treatment to reduce mortality in COVID-19, however, since no control arm was used, evaluation of the efficacy is challenging.

- [Tocilizumab as supportive treatment: systemic review](#)

This is a systemic review of 63 articles on tocilizumab (TCZ) for supportive treatment. TCZ is not FDA approved for COVID-19 use but is approved for cytokine release syndrome (CRS). Contraindicated in active or latent TB, CBC abnormalities, and hepatitis. Ongoing RCTs may determine whether TCZ is effective in COVID-19.

- [WHO plans to compare multiple vaccines in one trial](#)

The WHO sketched out plans for a clinical trial that will test numerous vaccines in a single study. Some developers and funders have plans for their own efficacy trials. But key questions remain, such as which vaccines will be tested first — or at all — and how their effectiveness will be measured and compared.

- [Hydroxychloroquine treatment results in slower viral clearance](#)

In an underpowered, retrospective trial with risk of selection bias, patients with mild to moderate disease treated with hydroxychloroquine showed longer time to clear the virus than patients that were not treated with HCQ.

Other Science

- [Lymphocyte, neutrophil, and platelet count independent risk factors for severe disease](#)

Meta-analysis of 15 studies (n = 3090) comparing lab values of non-severe vs. severe COVID-19 manifestations. Non-severe had fewer WBC and neutrophils and more lymphocytes and platelets compared to severe group. No statistical difference in monocytes was seen. Severe patients had more neutrophils, higher NLR level, and fewer lymphocytes than non-severe patients with COVID-19. These markers might assist clinicians to monitor and predict the severity and prognosis of COVID-19.

- [Chronic kidney disease and acute kidney injury involvement elevated in severe disease patients](#)

A systematic review and meta-analysis. As the severity of COVID-19 increases, the risk of acute kidney injury is strikingly elevated. Patients classified as severe receive continuous renal replacement therapy more frequently. CRRT is applied more frequently. Clinicians should be cautious of kidney diseases in COVID-19 patients, especially the severe and critical ones. Kidney function should be monitored to avoid end stage renal disease and mortality.

- [Innate and adaptive response timing explain recovery difference between COVID-19 and influenza](#)

This mathematical model compares pathogenesis processes between COVID-19 and influenza. The timing mismatch between host innate and adaptive immune responses found to be potential cause for higher severity/mortality in COVID-19. Adaptive response of COVID-19 comes before peak viral load while the opposite is true for influenza. The delay allows for innate system to clear influenza viruses before adaptive system takes over. Based on analysis, surpassing adaptive response to avoid its interference with innate response may help clear virus more effectively.

- [Authorities not successfully combatting misinformation about 5G on Twitter: satire may be contributing](#)

JMIR: In this study, a Social Network Analysis was performed on Twitter data discussing the conspiracy theory of 5G being

linked with the spread of the virus. It is not possible to discern satire from legitimate conspiracy theorists. Key users and influential web sources are identified. Content analysis revealed that 35% of individual tweets agreed with the conspiracy theory, 32% denounced it, and 33% did not express an opinion. Those users voicing their views against the conspiracy theory, link-baiting, or sharing humorous tweets inadvertently raised the profile of the topic, suggesting that policymakers should insist in the efforts of isolating opinions which are based on fake news.

- Mental health expected to take a toll: tracking changes via a living systematic review

A living systematic review from the Journal of Psychosomatic Medicine: authors are prioritizing studies that evaluate: (1) changes in mental health using current and pre-COVID-19 data, (2) factors associated with levels or changes of symptoms during COVID-19, and (3) the effect of interventions on mental health symptoms during COVID-19. The review can be found here: <https://www.depressd.ca/covid-19-mental-health>. As of today, over 3,000 titles/abstracts have been reviewed and they have begun to report on interventions.

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