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2020-05-11 DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING

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DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING

May 11, 2020

Executive Summary

NM case counts. Navajo Nation documentary. Medicaid reimbursement increase. Excess NYC mortality. German $R_0 > 1$. Chile COVID-19 certificates. High female incidence in Quebec. Swab 3D printing. Evidence lacking school reopening. Cloth mask review. WHO 2nd wave warning. Higher mortality in minorities. Environmental transmission controls. Behavior change. Correctional environment guidelines. Wuhan hospital transformation. Maximizing GI training. Threat and conformity. Recommendations on managing COVID-19 (first Italian SARS patients), and obesity and metabolic syndrome. Guidelines for neurologists. Ethics of off-label drugs use. Abbott antibody test approval. CRISPR test FDA approval. Viral sample inactivation. HCQ+azithromycin no benefit. Public-Private partnership for clinical trials. Drug repurposing. Cancer patient considerations. 35 new COVID-19 trials. Hyperinflammatory shock in children. Symptom app.

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

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

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NM Highlights

- [NM reports 8 more COVID-19 deaths and 207 additional cases on May 11](#)
As of today (5/11), the total positive cases and total deaths in the state are 5,069 and 208, respectively. The state has performed 106,721 tests, there are 207 individuals currently hospitalized for COVID-19, and 1,300 COVID-19 cases have recovered. New NMDOH portal featuring epidemiologic breakdown of cases.
- [New documentary focuses on coronavirus on the Navajo Nation](#)
CBS Originals created a new series called "Coronavirus in the Navajo Nation", which highlights the impact of the virus through interviews with doctors and community members. The Navajo Nation has one of the highest infection rates per capita in the U.S., and about 30% of the population does not have running water in their homes. [The documentary is available on the CBS News Website](#).
- [Medicaid reimbursement rates increased for hospitals, up to 50% for eligible ICU patients](#)
The NM Health Services Department has announced an increase in Medicaid funding for hospitals. Hospitals will be reimbursed more for all Medicaid patients and on a sliding scale with up to a 50% increase in funding for eligible ICU patients. This funding was secured through the Federal Government, is backdated to April 1st and will continue as long as there is a Federal State of Emergency. This additional funding is separate from CARES Act, PPP, and Health Care Enhancement Act funding.

US Highlights

- [Excess mortality during the COVID-19 outbreak in NY City](#)
During March 11–May 2, 2020, a total of 32,107 deaths were reported to New York City Department of Health and Mental Hygiene; of these deaths, 24,172 (95% confidence interval = 22,980–25,364) were found to be in excess of the seasonal expected baseline. Included in the 24,172 deaths were 13,831 (57%) laboratory-confirmed COVID-19–associated deaths and 5,048 (21%) probable COVID-19–associated deaths, leaving 5,293 (22%) excess deaths that were not identified as either

laboratory-confirmed or probable COVID-19–associated deaths. The 5,293 excess deaths not identified as confirmed or probable COVID-19–associated deaths might have been directly or indirectly attributable to the pandemic. The percentages of these excess deaths that occurred in persons infected with SARS-CoV-2 or resulted from indirect impacts of the pandemic are unknown and require further investigation.

International Highlights

- [Germany's R0 remains above 1](#)

Germany's R0 beginning May 9th has been above 1. The R0 is 1.07 on Monday, May 11th according to the Robert Koch Institute for Public Health and Disease Control. The 1.07 R0 number indicates that 100 infected people on average infect 107 others.

- [Chile plans controversial COVID-19 certificates](#)

Chile is poised to become the first country to provide certificates to people who have recovered from COVID-19. However, in an April 24 scientific brief, the World Health Organization stated that “there is not enough evidence about the effectiveness of antibody-mediated immunity” and that a certificate could encourage people to “ignore public health advice”.

- [More Quebec women with COVID-19 than men](#)

Quebec National Institute of Public Health reported women account for 59.7% of the people infected and 54% of deaths. The province has experienced 36,986 confirmed cases and 2,786 deaths. Quebec is leading Canadian cases at 326 cases per million.

Economics, Workforce, Supply Chain, PPE Highlights

- [3D-printing to address NP swab shortages](#)

A filament-based 3D printer created a 15 cm long swab with a brush and score that could be used as a NP swab. Swabs were printed with polyethylene terephthalate glycol filament, a food grade and widely available plastic. Effectiveness of the swabs were initially confirmed by using RT-PCR on nasopharynx collections from 2 individuals. The printed swabs were used in a trial of 24 inpatients and no significant difference was noted between the 3D-printed swabs and commercial swabs, suggesting that 3D printing could potentially help address the shortage in NP swabs.

- [Schools plan to reopen without sufficient data on children's role in transmission](#)

Limited data suggests that children are less susceptible to COVID-19 and may not transmit to others. Government officials in several countries have opened schools with smaller class sizes, shortened days, and extra hand washing. Healthcare providers and epidemiologists disagree on the risk of transmission in these settings and caution against such measures.

- [Effectiveness of cloth masks: A systematic review](#)

MedRxiv preprint: Very few studies examine the use of cloth masks in preventing respiratory illnesses. In this systematic review of 10 studies, cloth masks are not as effective as medical masks but may be better than no masks at all. Recommendations are to standardize masks with usage of the materials proven to have high filtration efficacy. Leakage needs to be minimized as much as possible. Use of cloth masks should not lead to a neglect of other infection control measures and are not recommended to be used by healthcare workers.

Epidemiology Highlights

- [WHO warns of second wave if countries do not have adequate testing and tracing capacity](#)

WHO warns for need of adequate testing and tracing capacity to suppress new clusters as countries exit lockdowns. This warning comes as there is an increase in new cases in Germany, South Korea, and China who had previously decreased viral spread. Early studies point to lower than expected antibody levels in the general population leaving many susceptible. The risk of a larger second wave remains if communities do not have the capacity to adequately identify and suppress new clusters.

- [Higher risk of COVID-19 death for minority ethnic groups](#)

MedRxiv preprint: In an observational retrospective study, the medical records of more than 17 million residents of England were investigated. The analysis showed that certain medical conditions are linked to a higher risk of death, but the prevalence of such conditions in non-white people plays only a small part in the heightened risk, as does the prevalence of social disadvantages such as low income. The researchers say that there is an urgent need for better measures to protect people in minority ethnic groups from the disease.

- [Ozone, temperature and humidity control reduce spread of SARS-Cov-2](#)

Evidence strongly suggests that the COVID-19 could be transmitted via air in inadequately ventilated environments. Experimental data from Chinese cities showed that coronavirus survival was negatively impacted by ozone, high temperature and low humidity. The spread of SARS-Cov-2 was reduced by increasing ambient ozone concentration level from 48.83 to 94.67 mug/m(3) and decreasing relative humidity from 23.33 to 82.67% and temperature from -13.17 to 19 degrees C).

Healthcare Policy Recommendations

- [Principles of behavior change to reduce transmission](#)

Authors detail principles of behavior change that can help reduce transmission. In addition to isolation and social distancing measures, enactment of key personal protective behaviors is vital in order to reduce the transmission. Interventions to target individual behaviors such as these could potentially lead to substantial population-level effects, and behavioral science models and methods can be used to develop and evaluate such interventions. Given the urgency of the current situation, there may be merit in establishing an online hub for helping with the design of pragmatic evaluations, piloting of interventions, and rapid reporting of experiences and outcomes using a standardized approach.

- [Challenges of COVID-19 management in correctional environments](#)

The U.S. holds almost 2.3 million people (exceeding 0.7% of its total population) in state and federal prisons, local jails, immigration detention centers, juvenile correctional facilities, military prisons, and state hospitals. Prison staff enter and exit daily, and prisoners are regularly transferred between facilities. The correctional environment poses additional risks including overcrowding, poor ventilation, close habitation, and dormitory-style housing, which will increase COVID-19 transmission. In addition, institutions strictly control everyday items such as soap, cleaning supplies, and hand sanitizer and rarely provide spare clothing or bedding. These practices can lead to poor personal hygiene and may also contribute to virus spread. These and other challenges are discussed.

- [Wuhan experience of changing outpatient department into fever-only clinic in 8 hours](#)

(Letter to the editor): The authors report their experience of changing their outpatient department in Wuhan into fever patients-only clinic in 8 hours. They also used a ten-step reform to convert the whole hospital into an infectious disease hospital within 48 hours.

- [Maximizing GI trainee education during the COVID-19 pandemic](#)

An assessment was done of the impact of COVID-19 upon GI trainees worldwide. The authors conclude that while we have traditionally relied upon a model of high case volumes and passive learning through didactics, it is time now to embrace disruptive philosophy and technology – such as internet-based learning, simulator training, and adoption of new educational models. During the pandemic and its associated recovery, trainees should be encouraged to make weekly “schedules” of educational opportunities and individualized goals. Similarly, attending physicians must adapt to implement new training methods, with a focus on safety, efficiency, and well-being of trainees.

- [Association between COVID-19 threat and informational conformity consumer behavior](#)

This study from China considers informational conformity consumer behavior in current conditions. A structural equation model was used to analyze data (n=1453). The result shows that threats of death are positively associated with a need to belong, materialism and informational conformity consumer behavior. Authors recommend that officials should use public management power to reduce the people’s anxieties caused by death threats, alleviate the shortage of materials due to informational conformity consumer behavior, and block the possibility of the spread of the virus widely.

Practice Guidelines

- [Recommendations for acute management of COVID-19](#)

Italian clinicians share their COVID-19 clinical management suggestions, derived from the direct experience of the first 200 patients with acute respiratory failure, with 75 being admitted to ICU while undergoing mechanical ventilation.

- [Management of obesity and metabolic syndrome during COVID-19 pandemic](#)

COVID-19 patients with obesity and other comorbidities including metabolic syndrome are at a higher risk of requiring ICU stay and have increased rates of mortality. The authors outline the impact of COVID-19 on obesity and its associated metabolic syndrome, and the measures that can be taken to ensure that patients continue to receive adequate care during this pandemic. Pre-bariatric management includes education on healthy eating and exercise. Close follow-ups by multidisciplinary teams are essential for post-bariatric management. Authors recommend using online and telephonic platforms for these important communications to ensure best care.

- [Consensus for prevention and management of COVID-19 for neurologists](#)

A summary is provided by US and China authors on clinical guidelines and research on management of COVID-19 with emphasis on neurological manifestations. >30% of patients with COVID-19 report dizziness, headache, impaired consciousness, acute cerebrovascular disease, ataxia and epilepsy, taste impairment, smell impairment, vision impairment, neuralgia, or skeletal muscular damage. Neurologists need to wear caps, masks, scrubs, gloves and carry hand sanitizer. Patients and their companions must have temperature measured in triage routinely before entering the consulting room. Companions should avoid entering the room. Everyone must wear disposable medical masks. For patients with neurological symptoms but also highly suspicious of COVID-19, it is recommended that the patient go to a fever clinic first and consult a neurologist later. After work, doctors should remove the protective gear. It is forbidden to leave the contaminated area wearing PPE.

- [Guidelines for Neuroscience Community during COVID-19](#)

This review consolidates the current body of literature regarding the neurological impact of coronaviruses, discusses the reported neurologic manifestations of COVID-19, and highlights recommendations for patient management. Specific recommendations pertaining to clinical practice for neurologists and neurosurgeons are provided.

- [Ethical use of off-label drugs](#)

This short communication comments on two major ways of using off-label drugs: 1) in clinical practice or 2) in research, and in "pseudo-research" approach. Authors reflect on the 4 principles of ethics: autonomy, non-maleficence, beneficence, and justice. According to WHO, off-label use is justified when the condition is serious and there is evidence of potential benefit, there is no standard therapy available, patients have been informed and consented (if possible, in written), and the patients are monitored for safety concerns.

Testing

- [FDA authorizes use of Abbott's Covid-19 antibody test](#)

The U.S. FDA authorized the emergency use of Abbott Laboratories' test for detecting antibodies against coronavirus using its Alinity platform. The company had previously gained authorization to dispense antibody test last month using another diagnostic platform, the Architect system. This new authorization will allow the company to ship 60 million tests worldwide in June.

- [FDA approves first CRISPR test for SARS-CoV-2 for emergency use in the US](#)

The CRISPR-based diagnostic kit has been developed by Sherlock Biosciences, a Cambridge biotechnology company. The test should return results in about 40 min. Over 60 tests have been administered since early April. The kit uses the CRISPR machinery to detect a snippet of SARS-CoV-2 genetic material in nose, mouth or throat swabs and in fluid from the lungs.

- [Viral inactivation with EtOH, heat, and RNA special preservation fluid do not affect qRT-PCR results](#)

Nasopharyngeal swabs from 2 COVID+ Chinese patients were treated with 75% EtOH, 56oC for 30 min, 65oC for 10 min, or RNA virus special preservation fluid. Compared to no treatment, these inactivation methods had no significant effect on the

viral detection. Persons working with COVID swabs can use these four pre-inactivation strategies to protect themselves without compromising the PCR detection.

Drugs, Vaccines, Therapies, Clinical Trials

- [HCQ and azithromycin are not associated with significantly lower in-hospital mortality](#)
In a retrospective cohort study of 1438 patients hospitalized in metropolitan New York, compared with treatment with neither drug, the adjusted hazard ratio for in-hospital mortality for treatment with hydroxychloroquine alone was 1.08, for azithromycin alone was 0.56, and for combined hydroxychloroquine and azithromycin was 1.35. None of these hazard ratios were statistically significant.
- [A public-private partnership for harmonized clinical trials to accelerate COVID-19 vaccine](#)
The full development pathway for an effective vaccine for SARS-CoV-2 will require that industry, government, and academia collaborate in unprecedented ways, each adding their individual strengths. We discuss one such collaborative program that has recently emerged: the ACTIV (Accelerating COVID-19 Therapeutic Interventions and Vaccines) public-private partnership. Spearheaded by the U.S. National Institutes of Health (NIH), this effort brings together the strengths of all sectors at this time of global urgency.
- [Rapid repurposing of drugs for COVID-19: possible targets throughout the viral life cycle](#)
The best justified drugs for repurposing to treat COVID-19 patients are the host-factor-targeted drugs hydroxychloroquine, azithromycin, and camostat and nafamostat and the viral RNA dependent RNA polymerase targeted drugs remdesivir and favipiravir. The authors in the article detail the mechanisms of these drugs and include many other drugs being considered, although with less supporting evidence in the supplementary materials.
- [Cancer patients require special consideration; an overview of immune function and immunomodulators](#)
Review: the virology of COVID and its impact on cancer patients. Observational data of various immunomodulatory drugs and an ongoing Multi-site Study RCT in Europe are studying the effects of tocilizumab, nivolumab, and a chloroquine analog against the current standard of care. The authors discuss challenges faced while treating cancer patients during this pandemic and discuss potential approaches to their management.
- [35 New COVID-19 Trials registered today at clinicaltrials.gov](#)
Treatment trials: [Hydroxychloroquine in pneumonia, Ivermectin effect on viral replication, Safety of DV890, Zanubrutinib, Plitidepsin, Sitagliptin, Immunosuppressive treatment, Non-invasive ventilatory support, Co-infection management, Azithromycin, Zilucoplan to improve oxygenation, MAS825, High dose inhaled nitric oxide, Gum arabic as an immunomodulatory agent, Neuromuscular electrical stimulation, Convalescent plasma vs human immunoglobulin, ArtemiC, Observational cohort of critically ill, hydroxychloroquine vs placebo during radiotherapy, Chest CT results, Novel regimens, HFNO vs CPAP helmet, Allogenic pooled olfactory mucosa-derived mesenchymal stem cells, Randomized evaluation, Viriological characterization, Inhaled ibuprofen, Post-discharge dysfunction, Cancer care, Impact on mental health workers, Vagus nerve stimulation, Hypertonic saline nasal irrigation, Ifenprodil, ACE2 receptor modulators and isotretinoin, Immunosuppressed children and adults, Online intervention]. At time of writing, a total of 1298 were active, 70 completed, and 3 posted results.

Other Science

- [New phenomenon: Hyperinflammatory shock in previously asymptomatic children](#)
In England, a cluster was observed of 8 children with hyperinflammatory shock, showing features similar to atypical Kawasaki disease, Kawasaki disease shock syndrome, or toxic shock syndrome. Clinical presentations were fever, rash, conjunctivitis, peripheral oedema, and generalised extremity pain with significant gastrointestinal symptoms. All progressed to warm, vasoplegic shock, refractory to volume resuscitation and eventually requiring noradrenaline and milrinone for haemodynamic support. Most of the children had no significant respiratory involvement. All children tested negative for SARS-CoV-2 on broncho-alveolar lavage or nasopharyngeal aspirates.

- [Self-report of symptoms shows loss of taste and smell more common in positive cases](#)

This self-report study (n=2,618,862) of potential symptoms collected data on a smartphone app. Of the 18,401 who had got tested, the proportion of participants who reported loss of smell and taste was higher in those with a positive test result (65.03%) than in those with a negative test result (21.71%) (odds ratio=6.74; 95% CI). A model was applied to the data from all app users who reported symptoms (805,753) and predicted that 17.42% participants are likely to have COVID-19. Researchers suggest that loss of smell and taste should be included in routine screening.

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