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2020-04-05 DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING

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DAILY UNM GLOBAL HEALTH COVID-19 BRIEFING

April 5, 2020

Executive Summary

Cumulatively: 624 coronavirus cases and 12 deaths in New Mexico. State to receive \$1B in federal relief. Animals can be infected with coronavirus – individuals with COVID-19 should minimize contact with pets. CDC recommends everyone wear cloth face coverings in public, releases guidelines for pharmacies, and updates guidance on N95 respirator conservation. Repeat COVID-19 testing may be required for accurate incidence estimates. FDA-approved antiparasitic drug, Ivermectin, may kill the virus within 48 hours. Hydroxychloroquine evidence remains inconclusive. New drug targets identified for SARS-CoV-2.

New Mexico Highlights

- [NMDOH Update](#)
Today, an additional 81 cases of COVID-19 and 1 confirmed COVID-19 related death, bringing the total to 624 cases of COVID-19 and 12 COVID-19 related deaths in New Mexico.
- [Navajo Nation sees spike in COVID-19 cases](#)
As of April 4th, the Navajo Nation has experienced at least 321 COVID-19 cases and 13 COVID-19 related deaths; this represents more cumulative deaths than in all other parts of New Mexico combined. The total number of cases on the Navajo Nation includes 56 from New Mexico – 17 of whom were in McKinley County and 30 in San Juan County.
- [New Mexico to receive more than \\$1 billion in COVID-19 relief from federal government](#)
NM is slated to receive >1 billion dollars to help people and businesses affected by coronavirus. The \$17 million already received will be used to support housing related costs, such as resources for the homeless and prevention of eviction.
- [5 more residents, 8 additional staffers test positive for COVID-19 at La Vida Llena senior care facility](#)
Long-term senior care facility La Vida Llena (Albuquerque) reported 13 new cases (5 residents and 8 staff members) on Saturday (4/4). The total number of positive cases at the facility has reached 35 and 2 residents have died.
- [Border wall construction continues](#)
Construction of the border wall in New Mexico continues and has not slowed during pandemic.

US Highlights

- [Animals can get coronavirus -- USDA advises infected people avoid animals, including pets](#)
Nadia, a tiger at the Bronx Zoo in New York, has become the first of her kind to test positive for the coronavirus. The 4-year-old female Malayan tiger tested positive after developing a dry cough and is expected to recover. Implications that felines and other pets may be able to carry coronavirus bears further vigilance. USDA advises anyone sick with coronavirus to minimize contact with animals, including pets, until more information is known about the virus.

Epidemiology Highlights

- [Repeat testing may be necessary to accurately estimate incidence of COVID-19 in communities](#)
This CDC report of the nursing home outbreak in King County Washington suggests that 30% of the residents in that nursing home eventually tested positive, despite only 50% positive testing rates on the first day of testing. This suggests that repeat testing in follow-up samples is going to be important in assessing risk in the community.

- [CDC Launches New Weekly COVID-19 Surveillance Report called "COVIDView" to interpret key indicators related to COVID-19](#)

Healthcare visits for COVID-19 type symptoms are elevated relative to what is normally seen this time of year. Overall COVID-19 associated hospitalizations are at 4.6/100,00 with a predominance seen in older adults, similar to an annual influenza epidemic. Deaths attributed to pneumonia and flu reached 8.2% which is above the 7.2% epidemic threshold. Healthcare visits for COVID-19 type symptoms are elevated relative to what is normally seen this time of year.

- [WHO tool for assessing behavioral insights about COVID-19](#)

WHO has developed a free tool to assess the public's trust in health authorities, risk perception, adoption of recommended behaviors, knowledge, barriers to recommendations, misperceptions, and possible stigma. The tool will be useful for collecting, analyzing, and reassessing behavioral insights.

Policy, Economics, Workforce, Supply Chain, PPE Highlights

- [CDC recommends everyone wear cloth face coverings in public as an additional precaution against COVID-19 illness spread](#)

CDC is now recommending that the public wear cloth face coverings when in public. The caveat being that the person wearing the face mask have the capacity to remove it if necessary (e.g., small children and individuals with disabilities). The recommendation for cloth masks, rather than paper masks is meant to ensure that medical personnel have access to all available masks. No specific requirements are given for type or material that the face coverings be made from. They warn that this is not a substitute for maintaining 6 feet of social distance.

- [CDC provides guidelines for pharmacies to reduce pharmacy staff's exposure to COVID-19](#)

The CDC recommends pharmacies provide hand sanitizer for customer use, encourage electronic prescriptions, avoid touching items handled by customers, avoid touching their own faces, sanitizing hands and counters after interacting with customers, maintaining 6 feet of social distancing, and removing unnecessary touchable items from the pharmacy.

- [Updated CDC strategies for optimizing the supply of N95 respirators](#)

CDC announces updated guidance on use of airborne infection isolation rooms (AIIRs) for aerosol-generating procedures performed on patients with suspected or confirmed COVID-19 patients. Aerosol-generating procedures performed on patients with suspected or confirmed COVID-19 patients should take place in an airborne infection isolation room (AIIR). Updates on FDA's Emergency Use Authorization (EUA) authorizing the use of certain NIOSH-approved respirator models in healthcare settings to the section on N95s. Facilities can consider temporarily suspending annual fit testing of HCP in times of expected shortages. The guidance gave OSHA field offices enforcement discretion concerning the annual fit testing requirement, as long as HCPs have undergone an initial fit test with the same model, style, and size. Limited re-use of N95 respirators when caring for patients with COVID-19 might also become necessary. However, it is unknown what the potential contribution of contact transmission is for SARS-CoV-2, and caution should be used. Re-use should be implemented according to CDC guidance. One effective strategy to mitigate contact transfer of pathogens from the respirator to the wearer could be to issue each HCP who may be exposed to COVID-19 patients a minimum of five respirators. Each respirator will be used on a particular day and stored in a breathable paper bag until the next week. This will result in each worker requiring a minimum of five N95 respirators if they put on, take off, care for them, and store them properly each day. This amount of time in between uses should exceed the 72-hour expected survival time for SARS-CoV2. HCP should still treat the respirator as though it is still contaminated and follow the precautions outlined in CDC's re-use recommendations

Science, Drugs, Therapeutics, Testing Highlights

- [Coronavirus drug identified: FDA-approved antiparasitic, Ivermectin, may kill the virus within 48 hours](#)

In vitro tests showed that a single dose of Ivermectin can kill SARS-CoV-2 at 48 hours with significant reduction by 24 hours. Next steps are to test the drug in people and determine effective dosage regimes.

- [Chinese 62-person RCT of hydroxychloroquine shows weak evidence of benefit](#)

This study provides limited support for the effectiveness of HCQ therapy for COVID-19. Larger, more rigorous clinical trials are ongoing and needed in U.S. populations. A full briefing is provided Appendix A1.

- [Patients with <100,000 viral load on day 10 of symptoms can be discharged into home-based isolation](#)
Infectiousness is linked to viral load in the throat and lungs, which is important to consider when deciding on patient discharge from hospital. It is suggested that COVID-19 patients with <100,000 viral RNA copies in their sputum on day 10 of symptoms could be discharged into home-based isolation. The onset of antibody production coincided with a gradual decrease in viral load. Half of patients developed antibodies against COVID-19 by day 7 following symptom onset.
- [New potential drug target identified for SARS CoV-2: nsp10/nsp16](#)
Scientists have mapped the atomic structure of nsp10/nsp16. This is the 4th protein structure of a potential drug target of SARS-CoV-2 identified, the other 3 were nsp15 endonuclease, nsp3 ADP ribose phosphate and nsp9 replicase. The new protein will be screened for novel inhibitors that could be used to develop new drugs. The research team says multiple drugs might be needed to treat COVID due to its possible resistance.
- [Antibody \(CR3022\) from 2000s SARS epidemic revealed a potential vulnerability of the new coronavirus](#)
A key finding is that the antibody's binding site is highly similar between the two coronaviruses (SARS and SARS-CoV-2). The high degree of similarity implies that the site has an important function that would be lost if it mutated significantly. This can aid in structure-based design of vaccines and therapeutics against SARS-CoV-2.

Contributing team members: Christophe G. Lambert, Anastasiya Nestsiarovich, Praveen Kumar, Nicolas Lauve, Hannah Groves, Rachel D. King, Estefania Montanez, Andrew S. Rowland, Kristine Tollestrup, Douglas J. Perkins

APPENDIX 1: Critical assessment of Chinese hydroxychloroquine clinical trial

Citation: medRxiv preprint doi: <https://doi.org/10.1101/2020.03.22.20040758>.

Title: Efficacy of hydroxychloroquine in patients with COVID-19: results of a randomized clinical trial.

Zhaowei Chen, Jijia Hu, Zongwei Zhang, Shan Jiang, Shoumeng Han, Dandan Yan, Ruhong Zhuang, Ben Hu and Zhan Zhang

Description: This was a small trial of 62 patients with positive Covid 19 tests who were randomized into a 5-day course of treatment with 400mg day HCQ treatment in Wuhan China in Feb 2020. All had a positive chest CT with pneumonia and did not have retinopathy, hx of arrhythmias severe liver or renal disease or prior covid treatment. Patients were followed for 5 additional days after treatment ended.

Results: Compared to controls the treatment group has a shorter body temperature recovery time (2.2 to 0.4 days). Cough remission time was also reduced. There were 4/62 patients who went on to severe illness and all of these were in the untreated (control) group. 25 (80.6%) in the treatment group had improved pneumonia scans compared to 17(54.8%) of the controls, a statistically significant 47% improvement. The only side effects in the treatment group were a rash and a headache.

Critical Assessment: These data suggest that hydroxychloroquine treatment might be a promising therapy which needs to be tested more thoroughly in blinded, randomized controlled trials. Limitations: not yet peer reviewed, not double blinded. Not clear whether primary endpoints were selected apriori or post-hoc. HCQ therapy has potentially serious side effects including retinopathy, and arrhythmia which have to be weighed for each patient. It is not clear how effective treatment would have been and what the side effects might have been in more severely affected patients, in a more diverse patient population, or after longer follow-up.

Bottom line: This study provides limited support for the effectiveness of HCQ therapy for Covid 19. Larger, more rigorous clinical trials are urgently needed in U.S. populations.

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