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Subject: Mandating vaccination of students, faculty and staff at Nevada's public universities
Date: Wednesday, August 18, 2021 11:03:09 PM

Members of the State Board of Health:

I am a pediatrician with special expertise in biosurveillance, disaster medicine and medical informatics. I serve on the City of Reno's COVID19 Task Force and its data subcommittee.

My background:

Twenty years ago, I was a key contributor toward the development and deployment of Real Time Outbreak Disease Surveillance (RODS), the United States' first automated bioterrorism/epidemic detection system. This system is still in use in Washoe County. I was coeditor and coauthor of the very first textbook to describe the principles and practices of biosurveillance as a branch of "Big Data," (HANDBOOK OF BIOSURVEILLANCE, Academic Press, 2006). Graduate students in the country's first biosurveillance training programs at the University of Pittsburgh, Carnegie Mellon University, John Hopkins University and others read my book. As a member of the COVID Task Force, I was part of a team led by Dr. Jeremy Smith that built the COVID Risk Meter, now adopted by the Washoe County Health District. I conceived of a predictive tool that is based on the math used for missile guidance, and recruited a professor from UNR's Department of Mechanical Engineering, Dr. Aditya Nair, to build the mathematical engine. He along with other key members of our data subcommittee, succeeded in building a tool, unique in the country, that has helped save lives in Washoe County by giving accurate advance warning of pandemic activity.

Here in Reno, as a pediatrician, I have been humbled and honored to have received a tribute read into the Congressional Record by Senator Dean Heller on April 21, 2016, the Distinguished Alumnus Award from Drexel University College of Medicine in 2018, and the CDC's HPV Champion Award in 2019 for my practice's accomplishing the highest HPV vaccination rate in Nevada at 93%, and the second highest rate in the United States. Our biggest insurer rated my practice as a top performer in managing chronic disease and our practice was one of only two in the region to consistently reach the Healthy People 2020 goals ten years in a row.

The main purpose of my testimony:

I am writing to the Board to urge you to approve an order requiring all students, staff and faculty to become fully vaccinated against COVID19, and to accept a booster shot (3rd dose) as soon as they are eligible for it. I also urge the Board to make no exemptions save for

persons with a documented allergy to polyethylene glycol (the carrier fluid in the vaccine), or suffering from a medical condition that a licensed physician certifies in writing should exempt the patient from the vaccine. The order should also allow for a delay in administering the vaccine until a patient who is COVID positive has recovered from the acute illness.

COVID19 is sufficiently dangerous that religious and philosophical exemptions have no application here. The Delta variant is the predominant viral strain. It produces 1,000 times the viral load of the original strain and its mutations enhance its efficiency at invading cells. It is an imminent threat to life and safety and, under such conditions, the order can override religious or philosophical objections.

Unvaccinated persons' risk of death is at least ten times the risk of death from influenza and the Delta variant is more lethal than the original strain. Moreover, patients who contract the disease are at high risk of direct and lasting damage to the heart and lungs, even with very mild symptoms, because COVID19 attacks heart and lung cells directly, and the resulting immune system storm that responds to the infection does even more damage. The sense of smell can be chronically and, it appears, sometimes permanently altered or destroyed, with a major impact on the quality of life. Chronic fatigue, shortness of breath, and "brain fog" can occur. This virus can destroy academic and professional careers and give its victims long term disabilities that will curse them and their families, likely for years.

The first waves of COVID infection saw the deaths of hundreds of thousands of Americans, especially older people. The newest waves, especially Delta, are killing patients in their prime earning years, destroying family income and wealth, leaving in its wake orphaned children, and harming the businesses that depend on these employees. Moreover, in Texas and Florida, COVID has infected so many children, that, a week ago, the **Dallas-Forth Worth Metroplex reported, at one brief point, no pediatric ICU beds available for a population of 7.6 million people.** Children's hospitals in Florida are in danger of being overwhelmed.

A year ago, we surmised that children, toddlers and babies did not host much virus and did not spread it easily. We know today that this is not true - children of all ages can spread the disease.

For all these reasons, everyone on campus at our public universities and community colleges must be vaccinated, not just to protect each other, but also their school age siblings at home. But that is not sufficient. I urge the Board to require booster shots for the fully vaccinated as well, as per CDC guidance. **This means everyone with a compromised immune system must receive a third dose immediately.** This includes patients who received solid organ transplants, patients receiving chemotherapy or certain biologic drugs that leave them susceptible to infections, or patients taking high daily doses of steroids.

Other patients who are fully vaccinated are protected now, but will also need boosters in the future, and the Board should mandate them as soon as they are available. The current plan is to administer them eight months after the second dose. Here is why:

Recent studies have shown that, beginning two months after the second injection is administered, the efficacy of the mRNA vaccines drops by about 4% every 2 months. Elderly residents who were among the first tier to be vaccinated are beginning to suffer higher numbers of breakthrough infections, and about a quarter of hospitalizations in seven states surveyed over the last week were vaccinated patients with breakthrough infections. Thankfully, they are not represented in intensive care units; the vaccines have prevented that. But preliminary studies in Israel suggest the efficacy of mRNA vaccines (the Israelis used primarily Pfizer vaccine, but the Moderna vaccine is built on the same technology) may drop, given enough time to as low as 40%. This is preliminary, of course, but given the lack of any "downside" to receiving a booster, the Biden Administration has concluded that the US government will provide them. I agree with this decision.

There will be those who object because the vaccines enjoy only "emergency authorization." However, this is a specious argument, entirely without merit. After hundreds of millions of doses, the vaccines have proved safe and effective, and in any event, the FDA is likely to give formal full clearance for marketing within a month or two.

In my opinion, it is possible, and even likely, that an annual booster will be required to maintain protection. Should this prove to be true, I ask that the Board mandate that as well.

Refusing this vaccine, to protect oneself and others against an extremely dangerous disease, while participating in university or college studies on campus, is, in my view, unethical, irresponsible, and unacceptable. Entering higher education is typically one of the first adult actions a person takes. Being an adult means accepting responsibility for one own actions. I urge the Board to set a firm expectation, and requirement, that every adult or adolescent on campus must satisfy.

Sincerely,

Ron M. Aryel, M.D., M.B.A.
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