

STATE OF MINNESOTA
COUNTY OF HENNEPIN

DISTRICT COURT
FOURTH JUDICIAL DISTRICT

State of Minnesota,

Plaintiff,

**AFFIDAVIT OF EZEKIEL
JONATHAN EMANUEL, M.D., Ph.D.**

v.

Derek Michael Chauvin,

J. Alexander Kueng,

Thomas Kiernan Lane,

Tou Thao,

Court File No.: 27-CR-20-12646

Court File No.: 27-CR-20-12953

Court File No.: 27-CR-20-12951

Court File No.: 27-CR-20-12949

Defendants.

TO: The Honorable Peter Cahill, Judge of District Court, and counsel for Defendants; Eric J. Nelson, Halberg Criminal Defense, 7900 Xerxes Avenue South, Suite 1700, Bloomington, MN 55431; Robert Paule, 920 Second Avenue South, Suite 975, Minneapolis, MN 55402; Earl Gray, 1st Bank Building, 332 Minnesota Street, Suite W1610, St. Paul, MN 55101; Thomas Plunkett, U.S. Bank Center, 101 East Fifth Street, Suite 1500, St. Paul, MN 55101.

EZEKIEL JONATHAN EMANUEL, being duly sworn under oath, states as follows:

Background and Qualifications

1. My name is Ezekiel Jonathan Emanuel, and I am an oncologist and bioethicist.
2. I am currently the Vice Provost for Global Initiatives, the Diane v.S. Levy and Robert M. Levy University Professor, Co-Director of the Health Transformation Institute, and on leave as Chair of the Department of Medical Ethics and Health Policy at the University of Pennsylvania.
3. On November 9, 2020, President-elect Joseph Biden named me to be one of the sixteen members of his Coronavirus Advisory Board.

4. I earned a Bachelor of Arts in Chemistry from Amherst College in 1979, a Master of Science in Biochemistry at Exeter College at Oxford University in 1981, and a Medical Degree from Harvard Medical School in 1988.
5. I completed my Residency at Beth Israel Hospital in Boston, Massachusetts in 1990.
6. I was a Fellow in Medical Oncology at Dana-Farber Cancer Institute and a Clinical Fellow in Medicine at Harvard Medical in Boston, Massachusetts from 1990 to 1992.
7. In 1991, I earned a Diploma in Internal Medicine and in Medical Oncology from the American Board of Internal Medicine.
8. I earned a Massachusetts Medical License in 1994.
9. From 1997 to 2011, I was the chair of the Department of Bioethics at The Clinical Center of the National Institutes of Health.
10. From 2009 to 2011, I served as special advisor for health policy to the Director of the White House Office of Management and Budget in the White House.
11. I have been a visiting professor at numerous universities and medical schools including UCLA, the Johns Hopkins Medical School, the Stanford Medical School, and the New York University School of Law.
12. I am currently a Fellow at the College of Physicians of Philadelphia; a Senior Fellow at the Center for American Progress; and an Elected Member of the National Academies, the American Academy of Arts and Sciences, the Association of American Physicians, the American College of Physicians, and the Royal Society of Medicine (UK).
13. I am a special adviser to the director-general of the World Health Organization.
14. I have written and edited 15 books and over 300 scientific articles, including peer-reviewed articles on infectious diseases and vaccines.

15. I am submitting this affidavit in connection with the State’s Motion for Continuance of Trial.

COVID-19 Public Health Risks

16. As of December 2020, nearly 20 million Americans have had laboratory confirmed cases of COVID-19.
17. As of December 2020, the United States’ COVID-19 death toll exceeds 336,000 people.
18. As of December 2020, Minnesota has exceeded 410,000 confirmed cases of COVID-19 and 5,200 deaths.
19. The likelihood of COVID-19 transmission is increased by four factors: (1) being indoors; (2) being in large crowds; (3) prolonged periods of interaction; and (4) forced exhalations such as public speaking, shouting, singing, and coughing.
20. The risks of COVID-19 transmission and superspreading events are particularly high in large in-person, indoor gatherings where it is difficult for individuals to remain at least six feet apart, and where attendees have traveled from outside the local area to attend the gathering. *See People with Certain Medical Conditions*, Ctrs. for Disease Control and Prevention <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html> (last visited Dec. 31, 2020).
21. The World Health Organization advises that “[t]he risks of getting COVID-19 are higher in crowded and inadequately ventilated spaces where infected people spend long periods of time together in close proximity. These environments are where the virus appears to spread by respiratory droplets or aerosols more efficiently” *Coronavirus disease (COVID-19) advice for the public*, World Health Org.,

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>
(last visited Dec. 31, 2020).

22. The Biogen conference held at a hotel in Boston on February 26 and 27, 2020 became a superspreading event, spreading COVID-19 to a Boston homeless shelter, Florida, Indiana, North Carolina, as well as Australia, Slovakia, and several African countries. It is estimated that the two-day meeting caused about 245,000 (range 205,000 to 300,000) COVID-19 cases worldwide. Jacob E. Lemieux et al., *Phylogenetic analysis of SARS-CoV-2 in Boston highlights the impact of superspreading events*, Science Magazine, Dec. 10, 2020, <https://science.sciencemag.org/content/early/2020/12/09/science.abe3261.full>.

Estimated Timeline for COVID-19 Vaccine

23. The COVID-19 vaccine developed by Pfizer Inc. and BioNTech SE was given Emergency Use Authorization by the U.S. Food and Drug Administration (FDA) on December 11, 2020. Within the first week after FDA approval, Pfizer shipped approximately 2.9 million doses of its vaccine across the United States. Each individual requires two doses of the vaccine separated by 21 days. It is estimated that by March 1, 2021, Pfizer will have shipped approximately 60 million doses of its vaccine, which would be sufficient to vaccinate 30 million Americans. By June 30, 2021, it is estimated that Pfizer will have shipped the full 100 million doses, which would be sufficient to vaccinate 50 million Americans. Pfizer has also reached an agreement with the U.S. government to supply an additional 100 million doses of its COVID-19, and expects to deliver the full 200 million doses by July 31, 2021.
24. The COVID-19 vaccine developed by ModernaTX, Inc. was given Emergency Use Authorization by the FDA on December 18, 2020. Within the first week after FDA

- approval, Moderna shipped approximately 5.9 million doses of its vaccine across the United States. Each individual requires two doses of the vaccine separated by 28 days.
25. Several COVID-19 vaccines developed by other companies in the United States and abroad are currently in Phase 3 clinical trials.
 26. Johnson & Johnson is developing a one-shot COVID-19 vaccine. The company has completed enrollment of 40,000 individuals in its Phase 3 vaccine trial. The company estimates that it will have sufficient safety and effectiveness data for its vaccine to be evaluated by the FDA sometime at the end of January 2021. If given an Emergency Use Authorization, Johnson & Johnson expects to ship approximately 10 million doses by March 1, 2021. It expects to ship approximately 90 million doses by June 1, 2021.
 27. The initial vaccines will be administered first to “Tier 1a,” which includes approximately 24 million healthcare workers and residents of long-term care facilities such as nursing homes. Kathleen Dooling, MD et al., *The Advisory Committee on Immunization Practices’ Updated Interim Recommendation for Allocation of COVID-19 Vaccine — United States, December 2020*, Morbidity and Mortality Weekly Report Vol. 69 (Dec. 22, 2020), at 2 <https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm695152e2-H.pdf>.
 28. On December 22, 2020, the Advisory Committee on Immunization Policy (ACIP), an independent board advising the CDC, recommended that “Tier 1b” should include essential workers, such as teachers, first responders, and food and agriculture workers, and individuals over the age of 75. “Tier 1b” includes approximately 49 million individuals. Dooling, *supra*, at 1-2.
 29. The ACIP recommends that the next tier, “Tier 1c,” should include individuals between the ages of 65 to 74, individuals between the ages of 16 and 64 with comorbid conditions,

and other essential workers, such as transportation, construction, and energy workers. “Tier 1c” includes approximately 129 million Americans. Dooling, *supra*, at 3.

30. “Tier 2” will be the general public—that is, individuals between 16 and 64 years of age without serious comorbid conditions.
31. Based on current best estimates, the CDC has projected that there could be sufficient vaccine doses that by approximately March 1, 2021, 100 million Americans could be vaccinated—30 million from Pfizer’s vaccine, 10 million from Johnson & Johnson’s vaccine, and the remainder from Moderna’s vaccine.
32. President-elect Biden has indicated that his administration intends to oversee the injection of 100 million COVID-19 vaccine shots within his first 100 days as President—that is, by May 1, 2021.
33. Based on current estimates, it is likely that the COVID-19 vaccine will begin to be available to some individuals in the general population starting in late spring 2021.
34. Based on current estimates, it is likely that millions of Americans in the general population will receive a COVID-19 vaccination between March 2021 and June 2021.
35. As the number of Americans who receive a COVID-19 vaccine increases, the number of new COVID-19 infections and, importantly, severe cases of COVID-19 are likely to decrease over time. Indeed, as more people gain immunity through a vaccine, it becomes less likely that COVID-19 will be transmitted, both to people who have received the vaccine and those who have not.

Risk of COVID-19 Transmission At Trial

36. At the time the trial in this case is scheduled to begin in March 2021, very few members of the general public will have had the opportunity to receive a COVID-19 vaccine. Indeed,

it is likely that only health care workers, residents of long-term care facilities, Americans over age 75, and a few essential workers will have been vaccinated. Consequently, even with social distancing measures and mask protocols, an in-person trial in March 2021 that attracts a large number of people who are indoors for prolonged periods of time with public speaking is likely to create a substantial risk of COVID-19 transmission. At risk would be court staff, lawyers, witnesses, jurors, media, and members of the public assembled at the courthouse. Given the high incidence of COVID-19 in the community, the trial in this case could even become a superspreader event.

37. If the trial takes place as scheduled in March 2021 and there are large public demonstrations during or after the trial, these large public gatherings are also likely to pose a substantial risk of COVID-19 transmission within the community and among the general public. The gatherings would occur in the cold Minnesota winter. Current data suggests high transmission of COVID-19 in cold weather at outdoor events, such as hockey games. The virus seems to survive and transmit better in cold, dry air.
38. By June 2021, a COVID-19 vaccine is likely to have been available to millions of people in the general public. Based on current estimates, it is likely that tens of millions of Americans—if not 100 million Americans—will receive vaccinations in the three months between March 2021 and June 2021. It is therefore expected that the risk of community spread of COVID-19 in June 2021 will be substantially lower than in March 2021.
39. From a public health perspective, large public gatherings—including those conducted with proper social distancing and mask protocols—will be substantially safer in June 2021, after many Americans have had an opportunity to obtain a vaccine, than in March 2021.

FURTHER AFFIANT SAYETH NAUGHT.

Dated: December 31, 2020

/s/ Ezekiel Jonathan Emanuel
EZEKIEL JONATHAN EMANUEL