Exhibit G

Declaration of Robert Harrison, MD, MPH

I, Robert Harrison, declare as follows:

1. I am an occupational health physician at the University of California, San Francisco (UCSF), where I specialize in occupational diseases, including the prevention and control of work-related infections. Since the COVID-19 pandemic began, I have advised public health agencies on measures to prevent the spread of COVID-19 in a variety of workplaces, including meatpacking plants, correctional facilities, performance arts, and other crowded indoor settings. I am submitting this declaration to explain the most basic practices that a meatpacking plant would need to have in place to prevent widespread transmission within the plant.

2. The opinions expressed herein are based on my medical training, my experience as a physician, my experience as an advisor to workplaces and safety regulators across the country, the academic literature on COVID-19, my review of safety guidelines issued by a variety of government and academic institutions, and my review of the evidence that has been submitted in this case.

Professional Background

3. I am licensed to practice medicine in the State of California. I am board certified in both Internal Medicine and Occupational and Preventive Medicine. I have practiced occupational medicine on a full-time basis since 1984. I graduated from the Albert Einstein College of Medicine in 1979, and completed an Internal Medicine Residency at Mount Zion Hospital in San Francisco, California from 1979 to 1982. I then completed a Residency in Occupational Medicine at UCSF from 1982 to 1984. Attached as Exhibit A is a current, accurate copy of my curriculum vitae.

4. I currently work as Clinical Professor of Medicine at UCSF and serve as Chief of the Occupational Health Surveillance and Evaluation Program at the California Department of Public Health. Previously, I served for many years as an Independent Medical Examiner for the Workers Compensation Appeals Board of the State of California, which adjudicates workplace injury claims. Over the past 30 years, I have prepared and submitted over 3,000 reports regarding the causes and treatment of work-related injuries and diseases.

5. A special focus of my work involves assessing, treating, and preventing occupational exposure to infectious diseases, including HIV, influenza, tuberculosis, and most recently, COVID-19. Through this work, I have spent years studying how infectious diseases are transmitted in a range of workplaces.

6. I am familiar with the work environment in meat and poultry plants from consulting with federal OSHA regarding ergonomic hazards and injuries in a large plant in Missouri. I have also read all of the declarations that have been submitted in this case.

7. Since March 2020, I have advised a number of employers and public health agencies on measures to prevent the spread of COVID-19 in the workplace. This work has focused on congregate settings where many people are indoors together for long periods of time, such as prisons and meatpacking facilities.

COVID-19 in Meatpacking Plants

8. Several features of COVID-19 make it particularly capable of rapid spread in crowded indoor settings like meatpacking plants.

9. COVID-19 is a respiratory disease caused by the virus SARS-CoV-2. The virus is highly contagious and is primarily transmitted through the air when an infected person exhales liquid particles containing the virus. These particles can be either droplets or aerosols. Droplets

are large particles that travel as a projectile from a person's mouth or nose into another person's eyes, nose, mouth, or ears. Aerosols are small particles that can remain in the air for minutes or hours and be inhaled by others. Both types of particles have been shown to transmit the virus that causes COVID-19.[1]

10. A person infected with COVID-19 typically does not develop symptoms for two to 14 days after becoming infected. During the pre-symptomatic period, the person is contagious and can spread the virus to others.[2]

11. Several factors increase the risk of transmission in meatpacking plants.

12. First, because the virus travels through the air, physical proximity greatly increases the risk of transmission.[3] This is why public health authorities worldwide have focused on keeping people physically separated.

13. Second, the virus' airborne nature means that indoor spaces are more prone to rapid spread. Outdoors, liquid particles are diluted by wind and quickly disperse into the surrounding air. In indoor enclosed spaces, virus particle can remain in the air and circulate for others to inhale. Research has shown that the airflow in beef processing plants can spread infectious bioaerosols widely.[4]

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[1] Meyerowitz et al., *Transmission of SARS-CoV-2: A review of viral, host, and environmental factors*, Ann. of Internal Medicine (Sept. 17, 2020), https://www.acpjournals.org/doi/10.7326/M20-5008; Prather et al., *Airborne transmission of SARS-CoV-2*, Science (Oct. 5, 2020).

[2] There are too many studies showing asymptomatic spread to list, but for a couple examples, see Furukawa NW, Brooks JT, Sobel J, *Evidence supporting transmission of severe acute respiratory syndrome coronavirus 2 while presymptomatic or asymptomatic*, Emerging Infect. Dis. (2020). Kimball A, Hatfield KM, Arons M, et al., Ctrs. for Disease Ctrl. & Prevention, *Asymptomatic and presymptomatic SARS-CoV-2 infections in residents of a long-term care skilled nursing facility—King County, Washington, March 2020*, Morb. & Mort. Wkly. Rep. 2020;69:377–81; Ferretti et al., *The timing of COVID-19 transmission*, medRxiv preprint (Sept. 16, 2020), https://www.medrxiv.org/content/10.1101/2020.09.04.20188516v2.

[3] Meyerowitz et al., supra ("there is abundant evidence that proximity is a key determinant of transmission risk").

[4] Beck et al., *Monitoring of pathogenic bioaerosols in beef slaughter facilities based on air sampling and airflow modeling*, Applied Engineering in Agric., Vol. 35, No. 6 (2019).

14. Third, the longer someone is exposed to an infected person, the greater the risk of infection. This is because a person must receive a threshold amount of virus ("infectious dose") before they will become infected. A person is more likely to receive an infectious dose the longer they are in close proximity to an infected person who is exhaling the virus with each breath.

15. Fourth, the harder a person breathes, the more virus particles they expel, and the farther those particles travel. The virus therefore transmits more effectively in settings where people are engaged in physically strenuous activity.

16. These factors account for the fact that many of the biggest clusters of COVID-19 cases have occurred in crowded indoor settings—often referred to as "congregate settings"—like prisons, large social gatherings, bars, restaurants, and food processing facilities. These clusters are well documented.[5]

17. All of these factors are present in meatpacking plants. Workers stand close together on processing lines for long hours, typically less than six feet apart. Crowding also occurs in common areas, like locker rooms and cafeterias.[6] The work is strenuous and leads workers to breath hard throughout their shifts.

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[5] For several examples, see Kakimoto K, Kamiya H, Yamagishi T, Matsui T, Suzuki M, Wakita T, Ctrs. for Disease Ctrl. & Prevention, *Initial investigation of transmission of COVID-19 among crew members during quarantine of a cruise ship—Yokohama, Japan, February 2020*, Morb. Mort. Wkly. Rep. (2020); McMichael TM, Clark S, Pogosjans S, et al., Ctrs. for Disease Ctrl. & Prevention, *COVID-19 in a long-term care facility—King County, Washington, February 27–March 9, 2020*, Morb. Mort. Wkly. Rep. (2020); Wallace M, Marlow M, Simonson S, et al., Ctrs. for Disease Ctrl. & Prevention, *Public health response to COVID-19 cases in correctional and detention facilities—Louisiana, March–April 2020*, Morb. Mort. Wkly. Rep. (2020).

[6] Donahue et al., Ctrs. for Disease Ctrl. & Prevention, *Characteristics of meat processing facility workers with confirmed SARS-CoV-2 infection—Nebraska, April-May 2020*, Morb. & Mort. Weekly Report, Vol. 7, No. 31 (Aug. 7, 2020) (describes crowding both in production areas and in the cafeteria); Steinberg et al., Ctrs. for Disease Ctrl. & Prevention, *COVID-19 outbreak among employees at a meat processing facility—South Dakota, March-April 2020*, Morb. & Mort. Weekly Report, Vol. 69, No. 31 (Aug. 7, 2020) ("SARS-CoV-2 can spread rapidly in meat processing facilities because of the close proximity of workstations and prolonged contact between employees.").

18. Meatpacking plants are therefore uniquely susceptible to the spread of COVID-19. Few other workplaces involve people standing so close together for so many hours at a time. As a result, dozens of meatpacking plants across the country have experienced severe outbreaks of COVID-19. The CDC and other researchers have consistently stressed the proximity of workers, the indoor setting, and the length of time close together as key drivers of these clusters.

19. Researchers and public health officials anticipate that COVID-19 cases will continue to rise this winter. For instance, the CDC Director recently described this winter as "the most difficult time in the public health history of this nation."[7] Cold temperatures are more conducive to the survival of viruses like SARS-CoV-2. Winter also means that people spend more time indoors, where transmission is more likely. Furthermore, workers who were infected in previous outbreaks may now have waning immunity, as several recent cases of reinfection suggest.[8] I am therefore concerned that there will be new spikes at meatpacking plants in the coming months.

Essential Workplace Protections

20. In my experience, and based on the medical literature, several workplace protections against COVID-19 are essential to prevent widespread transmission between workers: physical distancing between workers, universal use of masks, adequate sick leave, and testing to identify infected employees (both symptomatic and asymptomatic) and emerging

[7] Sheila Kaplan, *Redfield warns this winter may be "the most difficult time in the public health history" of the U.S.*, N.Y. Times (Dec. 2, 2020).

[8] See, for example, Marco Bongiovanni, *COVID-19 re-infection in a healthcare worker*, J. Med. Virology (Sept. 29, 2020); Gousseff et al., *Clinical recurrences of COVID-19 symptoms after recovery: Viral relapse, reinfection or inflammatory rebound?*, J. Infection, Vol. 81, No. 5 (June 30, 2020); Tomassini et al., *Setting the criteria for SARS-CoV-2 reinfection—six possible cases*, J. Infection (Aug. 12, 2020). The possibility of reinfection is further demonstrated in workplace testing protocols, which typically call for a person to resume testing 90 days after their first positive test.

hotspots. There are many other protections that are important as well, that I would consider to be best practices, and that I frequently recommend to employers and public health agencies, such as face shields and ventilation upgrades.[9] But these four worker protection elements are critical as a baseline of protection. I consider each of these elements as "layers of protection" that should all be considered essential and of equal importance in preventing and controlling COVID-19 infections in meatpacking plants. Without them, an employer will be exposing its workers to an especially high risk of COVID-19 infection.

Physical distancing to avoid transmission

21. Because the virus travels through the air, health authorities worldwide have focused on keeping people physically separated. This is widely considered to be the most important protection against the spread of COVID-19, to the point that most countries and U.S. states have been willing to shut down large portions of their economies for weeks or months in order to achieve physical distancing.[10]

22. Distancing is so important because the virus travels through the air and is most likely to infect people who are close by. When people are spaced far enough apart, it is less likely that the virus will travel the distance required to reach another person. Researchers have studied this in the context of other air-transmitted viruses for decades, and it is generally agreed

[9] The recent safety standards issued by California's state OSHA agency provide a more comprehensive list of best safety practices. See State of Cal., News Release, *Standards board unanimously adopts emergency temporary standards to protect workers from COVID-19*, Nov. 20, 2020, https://www.dir.ca.gov/DIRNews/2020/2020-98.html.

[10] Courtemanche et al., *Strong social distancing measures in the United States reduced the COVID-19 growth rate*, 39 Health Aff. 1237 (May 14, 2020), https://pubmed.ncbi.nlm.nih.gov/32407171/.

that at least 6 feet of distance is required to protect against the transmission of viruses like SARS-CoV-2.[11]

23. As a workplace protection, the need for physical distancing is universally recognized. Every state I am aware of has issued guidance that employers should increase the distance between workers wherever possible, and should space them apart at least 6 feet. The World Health Organization, the Centers for Disease Control and Prevention, and countless other institutions have recommended 6 feet of distance in the workplace, in schools, and anywhere else people might congregate.[12] Doctors and academic researchers of all kinds have recommended the same.[13] As a result of this guidance, employers in all industries have had to make adjustments while the COVID-19 pandemic remains active. Schools, restaurants, grocery stores, and other

[11] Ctrs. for Disease Ctrl. & Prevention, *Social Distancing: Keep a safe distance to slow the spread* (updated Nov. 17, 2020) (recommending "at least 6 feet" of distance and stating that distancing "is the best way to reduce the spread of coronavirus"); Chu et al., *Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis*, Lancet 2020; 395: 1973–87 (June 1, 2020) (surveying evidence that 2 meters of distance between people slows the spread of respiratory diseases); Abkarian et al., *Speech can produce jet-like transport relevant to asymptomatic spreading of virus*, Proc. Nat'l Acad. of Science, Vol. 117, No. 41 (Oct. 13, 2020).

[12] Donahue et al., Ctrs. for Disease Ctrl. & Prevention, *Characteristics of meat processing facility workers with confirmed SARS-CoV-2 infection—Nebraska, April-May 2020*, Morb. & Mort. Weekly Report, Vol. 7, No. 31 (Aug. 7, 2020) (report on Nebraska meatpacking outbreak describes the need for "physical distancing throughout the facility (especially locations prone to crowding, such as production areas and cafeterias or break areas)"); Dyal et al., Ctrs. for Disease Ctrl. & Prevention, *COVID-19 Among Workers in Meat and Poultry Processing Facilities—19 States, April 2020*, 69 Morb. & Mort. Weekly Report, 3 (May 1, 2020) (describes the dangers of "crowded conditions for workers in meat and poultry processing facilities" and recommends that "the workplace should be organized so that workers can be at least 6 feet (2 meters) apart"); Ctrs. for Disease Ctrl. & Prevention, *Operating schools during COVID-19* (updated Oct. 29, 2020) ("Most countries have changed the way they operate [schools] to . . . increase physical distance between students . . . ."), https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/prepare-safe-return.html.

[13] Chu et al., supra; David Nabarro, Katherine DeLand, Florence Lasbennes, *COVID in cold environments: risks in meat processing plants*, 4SD Working Paper (Nov. 11, 2020) (lists "reducing crowding" as a top recommendation), https://iuf.org/wp-content/uploads/2020/11/201106-COVID-in-cold-environments-e.pdf.

businesses have taken whatever steps are necessary to ensure adequate distance between employees and customers.

24. The need for distancing has been recognized in meatpacking just as in other workplaces. Several states have issued COVID-19-related rules for meatpacking and have required plants to increase distance between workers to 6 feet.[14] OSHA has not issued any mandatory rules for meatpacking or any other industry, but its voluntary guidance for meatpacking lists distancing at the very top of the "hierarchy of controls," which is a system for ranking safety protections from most effective to least.[15] The University of Nebraska Medical Center similarly recommends that meatpacking plants "maximize social distancing at lunch" and allow workers on the production lines to "maintain a distance of at least 6 feet from others whenever possible."[16]

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[14] For instance, a Michigan executive order requires meatpacking plants to "configure communal work environments so that employees are spaced at least six feet apart in all directions." Mich. Exec. Order No. 2020-145, § 14(c) (July 9, 2020). Minnesota's meatpacking rules require that "workers must be at least six feet apart" while working and on breaks. Minn. Dep't of Labor & Industry, *Preparedness Plan Requirements Guidance – Meatpacking*, at 1, 4 (updated July 29, 2020) (explaining that these rules are mandatory unless stated otherwise), https://www.dli.mn.gov/sites/default/files/pdf/COVID_19_meatpacking_guidance.pdf. Virginia's COVID-19 standard requires "medium exposure" workplaces, which include meatpacking plants, to "increase physical distancing between employees at the worksite to six feet." 16VAC25-220-60(C)(1)(e), 16VAC25-220-30, https://www.doli.virginia.gov/wp-content/uploads/2020/07/RIS-filed-RTD-Final-ETS-7.24.2020.pdf. An Illinois executive order requires plants to implement physical distancing, and to "modify and downsize operations . . . to the extent necessary to allow for social distancing." Ill. Exec. Order 2020-38, § 3(c) (May 29, 2020). See Ill. Dep't of Pub. Health, *Guidance for food and meat processing facilities* (updated June 24, 2020) (explaining how the executive order applies to meatpacking plants), http://dph.illinois.gov/covid19/community-guidance/guidance-food-and-meat-processing-facilities.

[15] Occupational Safety & Health Admin., Ctrs. for Disease Ctrl. & Prevention, *Meat and poultry processing workers and employers* (updated Nov. 12, 2020), https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/meat-poultry-processing-workers-employers.html. The guidance's first recommendation is to configure "work environments so that workers are spaced at least six feet apart." It explains that "the asymptomatic spread of COVID-19 supports the need for social distancing" in a plant.

[16] Univ. of Nebraska Med. Ctr., Global Ctr. for Health Sec., *Meat processing facility COVID-19 playbook*, 6, 10 (May 27, 2020) ("UNMC Playbook"), https://www.unmc.edu/healthsecurity/education/programs/docs/Playbook.pdf.

25. Distancing is necessary regardless of whether a plant has installed plastic barriers between workers, as has been done by many meatpacking plants. Large meatpacking outbreaks have persisted despite such barriers where the plant did not implement physical distancing.[17] In particular, plastic barriers probably do little to block the spread of aerosols, which can easily travel around and under the barriers and infect adjacent workers. Barriers between adjacent workers also do not prevent transmission across a processing line, or block large droplets when workers step back from the line.

26. In my experience studying meatpacking plants and advising plant workers and local public health officials, there are numerous ways that employers can maintain 6 feet of distance between workers. In the processing area, workers can be placed farther apart by moving work stations or leaving every other work station empty. Employers can also add shifts and have fewer people working each shift, to decrease overall crowding. In common areas like cafeterias, meatpacking plants can reduce crowding by staggering lunch breaks, expanding the cafeteria, or using other rooms in the plant as lunch rooms.

27. In short, physical distancing is a critical workplace protection against COVID-19. A meatpacking plant that does not maintain space between its workers is creating a high risk that the virus will spread widely within the plant.

[17] See, for instance, Steinberg et al., Ctrs. for Disease Ctrl. & Prevention, *COVID-19 outbreak among employees at a meat processing facility—South Dakota, March-April 2020*, Morb. & Mort. Weekly Report, Vol. 69, No. 31 (Aug. 7, 2020) (describing an outbreak that continued even after the facility "began screening all employees for fever, installing physical barriers on the production line, and amending the employee dress code to include optional masks"). The same occurred at the Foster Farms plant in California, where an enormous outbreak occurred months after the plant installed plastic barriers.

Clean masks

28. All of the public health guidance and rules I am aware of strongly recommend using masks wherever possible in addition to physical distancing.[18] Research suggests that face coverings can play an important role in blocking larger droplets from being exhaled.[19] However, cloth or paper masks alone are not sufficient for infection control, because they allow the smallest aerosol particles to pass through.

29. For masks to prevent transmission, they must cover the nose and mouth continuously. When a mask is worn below the nose, the wearer continues to emit virus through the nose, which can infect people close by. The same is true when the wearer removes the mask periodically, which leaves no protection at all.

30. It is therefore essential that employers give workers clean masks at the start of every shift and replace them whenever they get soiled or wet. When a mask gets wet or dirty, the wearer often cannot keep it on. The smell of a dirty mask can be overwhelming, and a wet mask does not allow the wearer to breathe—inhaling against wet fabric can create a sensation of drowning. In my experience, this is often a problem in food production workplaces, where liquids and other contaminants frequently soil workers' masks. Where this occurs, to maintain any benefit from masks, employers must give their employees at least one mask per day, and

[18] See, for example, Chu et al., supra; UNMC Playbook, supra, at 8 (recommending a "universal mask policy"); Dyal et al., Ctrs. for Disease Ctrl. & Prevention, *COVID-19 Among Workers in Meat and Poultry Processing Facilities—19 States, April 2020*, 69 Morb. & Mort. Weekly, 4 (May 1, 2020) (recommending masks in meatpacking plants "as a complement to social distancing" but stressing that they "are not a replacement for adequate distancing"); Nabarro, supra, at 1 (recommending "universal public health precautions" like "requiring face masks" in meatpacking plants).

[19] Meyerowitz et al., supra; Ctrs. for Disease Ctrl. & Prevention, *Considerations for wearing masks* (updated Nov. 12, 2020) (recommending that everyone over 2 years old wear masks whenever in public, but stating that "a mask is NOT a substitute for social distancing").

then replace them as needed if the mask becomes soiled or wet. A reusable elastomeric respirator may be a suitable alternative.[20]

Paid leave for sick workers

31. Preventing the spread of COVID-19 requires keeping sick people out of the workplace. People infected with COVID-19 are contagious both before and at the onset of symptoms, which can include cough, fatigue, fever, headache, congestion, sore throat, diarrhea, and loss of smell/taste. When a person is experiencing these symptoms, they are very likely to spread the virus to co-workers. To prevent transmission, it is critical to keep sick workers at home.

32. Employers' leave policies have a major influence on whether sick workers stay at home. Four policies are particularly important to ensure that sick workers do not show up for work. First, the employer must have a policy prohibiting work after a person has tested positive for COVID-19 or while a person is experiencing symptoms and awaiting a confirmatory test for COVID-19. Second, the employer must not penalize workers for staying home sick. Third, the employer must continue paying employees for time they spend at home because of COVID-19. Without paid leave, some employees may keep working out of financial necessity. Fourth, these policies must be clearly communicated to all employees. If employees do not know about them, they may keep working out of the belief that they will not be paid or will be sanctioned if they stay home. These are very basic occupational health principles.[21]

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[20] Lisa Brosseau, Jonathan Rosen, Robert Harrison, *Selecting Controls for minimizing SARS-CoV-2 aerosol transmission in workplaces and conserving respiratory protective equipment supplies*, Ann Work Exp and Health, (Aug. 21, 2020).

[21] See, e.g., LeaAnne DeRigne, Patricia Stoddard-Dare, and Linda Quinn, *Workers without paid sick leave less likely to take time off for illness or injury compared to those with paid sick leave*, Health Affairs 35, No. 3, 520-527 (2016); Dyal et al., Ctrs. for Disease Ctrl. & Prevention, *COVID-19 Among Workers in Meat and Poultry Processing Facilities—19 States, April 2020*, 69 Morb. & Mort. Weekly, 2 (May 1,

33. The necessity of paid sick leave to prevent COVID-19 transmission is universally recognized. Federal law currently requires employers to pay their employees for COVID-19-related absences, under the Families First Coronavirus Response Act. Every federal and state rule and guidance I have seen emphasizes that paid sick leave is critical during the pandemic. Keeping anyone at work while they have COVID-19 symptoms would dramatically increase the risk of workplace transmission.

Testing to identify spikes

34. As I explained above, meatpacking plants are uniquely at risk of spreading COVID-19 among workers. Proper protections will reduce that risk significantly, but they will not eliminate it, given the large number of people working indoors for long stretches. A fourth critical protection is therefore to provide onsite testing in order to identify initial clusters before they expand uncontrollably.

35. Testing is widely considered to be an essential part of any COVID-19 prevention strategy. Since the beginning of the pandemic, governments have sought to ramp up their testing capacity to identify clusters and contain them before they spread. This is especially important in congregate settings, where large numbers of people are indoors together. Thousands of workplaces—including long-term care and correctional—have introduced onsite testing to prevent uncontrolled outbreaks.[22]

2020) (describing meatpacking workers being "incentivized to work while ill as a result of medical leave and disability policies and attendance bonuses that could encourage working while experiencing symptoms"); UNMC Playbook, supra, at 7 (sick leave policies must be "communicated to all workers and adhered to by all levels of supervision and leadership").

[22] See, for example, Davlantes et al., Ctrs. for Disease Ctrl. & Prevention, *COVID-19 prevention practices in state prisons—Puerto Rico, 2020*, Morb. & Mort. Weekly Rep., Vol. 69, No. 33 (Aug. 21, 2020) (explaining the use of testing to detect and prevent outbreaks in correctional facilities); Gaur et al., Commentary, *Unprecedented solutions for extraordinary times: Helping long-term care settings deal with the COVID-19 pandemic*, 41 Infection Ctrl. & Hosp. Epid. 729-30 (2020) (same in nursing homes);

36. There are currently two main types of COVID-19 tests. One is called a polymerase chain reaction ("PCR") test, which typically have high accuracy but take one or more days to process. The other is called an antigen test, which can have lower accuracy but can be processed in a matter of minutes. Both are widely used for workplace testing.

37. The same need for testing is widely recognized in the meatpacking industry.[23] Major companies like Tyson and Smithfield have announced onsite testing programs, in order to make sure that new spikes are caught early.[24]

38. Without testing, there is no way to know whether a surge of cases is building, until it is too late. The prevalence of pre-symptomatic spread means that symptom screening will not identify early hotspots. As the CDC has recently explained, widespread testing is necessary in high-risk settings to identify "the silent spread of infection," because "persons with asymptomatic and presymptomatic infection are significant contributors to community SARS-CoV-2 transmission and occurrence of COVID-19."[25]

Hagan et al., Ctrs. for Disease Ctrl. & Prevention, *Mass testing for SARS-CoV-2 in 16 prisons and jails—Six jurisdictions, United States, April-May 2020*, Morb. & Mort. Weekly Rep., Vol. 69, No. 33 (Aug. 21, 2020); Nat'l Collaborating Ctr. for Methods & Tools, *What risk factors are associated with COVID-19 outbreaks and mortality in long-term care facilities and what strategies mitigate risk?*, (Oct. 16, 2020), https://www.nccmt.ca/knowledge-repositories/covid-19-rapid-evidence-service.

[23] See, for example, UNMC Playbook, supra, at 13 (recommending that plants "develop a testing strategy in coordination with local public health officials"); Waltenburg et al., Ctrs. for Disease Ctrl. & Prevention, *Update: COVID-19 among workers in meat and poultry processing facilities—United States, April-May 2020*, Morb. & Mort. Weekly Rep., Vol. 69, No. 27, at 891 (July 10, 2020) (highlighting the value of "comprehensive testing strategies" at meatpacking plants).

[24] Hannah Denham and Abha Bhattarai, *Tyson Foods adopts weekly coronavirus testing for workers*, Wash. Post (July 30, 2020), https://www.washingtonpost.com/business/2020/07/30/tyson-foods-coronavirus-tests/; Smithfield Foods, Press Release, *Smithfield Foods details ongoing COVID-19 testing at its facilities* (June 12, 2020), https://bit.ly/2HQoawR.

[25] Ctr. for Disease Ctrl. & Prevention, *CDC guidance for expanded screening testing to reduce silent spread of SARS-CoV-2* (updated Dec. 1, 2020), https://www.cdc.gov/coronavirus/2019-ncov/php/open-america/expanded-screening-testing.html.

39. An example of this danger is a recent outbreak at a Foster Farms poultry plant in California. Cases at the plant started building over the summer, and the county health department ordered the plant to start testing workers to identify where hotspots were emerging. But testing was not implemented. As a result, cases spiraled out of control—over 350 cases and 8 deaths as of September—and the plant was ultimately forced to shut down to contain the outbreak.[26] Adequate testing would have prevented this and dozens of other outbreaks at meatpacking plants around the country.

40. Temperature checks for COVID-19 infection are widely regarded as insufficient to identify cases and hotspots on their own. Many infected people who are actively spreading the virus do not have any symptoms at all. Others do have symptoms but do not have an elevated temperature.[27] Temperature checks do not catch any of these cases. Relying on temperature checks alone is dangerous because people can spread the virus for multiple days, and sometimes longer, without ever registering a temperature.[28] Fever screening has not prevented large outbreaks at multiple meatpacking facilities, including a Nebraska facility studied by the CDC this summer.[29]

41. Based on my experience designing COVID-19 testing programs for large workplaces, there are several components that any reasonable testing program must have.[30]

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[26] Tom Philpott, *A California chicken plant just had the deadliest meatpacking outbreak yet*, Mother Jones (Sept. 30, 2020).
[27] See supra note 2.
[28] UNMC Playbook, supra, at 8 ("It is common for an individual to have COVID-19 and be able to transmit the disease to others in close contact while showing no signs or symptoms."); Meyerowitz et al., supra.
[29] Donahue et al., *Characteristics of meat processing facility workers with confirmed SARS-CoV-2 infection—Nebraska, April-May 2020*, Ctr. for Disease Ctrl., Morb. & Mort. Weekly Report, Vol. 7, No. 31 (Aug. 7, 2020) (describes "the limitations of relying on symptom or fever screening alone").
[30] These components are informed by research comparing the effectiveness of different testing approaches. See Michael J. Mina, Roy Parker, Daniel B. Larremore, *Rethinking COVID-19 test*

These components are often referred to as diagnostic (or symptom-based) testing, outbreak testing, and surveillance (or screening) testing.

42. First, any worker with symptoms of COVID-19 should be given a COVID-19 test within 24 hours and asked to quarantine in the meantime. And when a person tests positive, all workers with whom the person has had close contact should be contacted, interviewed, and tested to identify any further spread. These tests of individual symptomatic and exposed workers are known as diagnostic testing.

43. Second, if two or more cases in a common work area are identified, all workers in that part of the plant, and any other workers with whom they have had significant contact, should be tested at least every 7 days, until the rate of positive tests falls below 1% for two consecutive testing cycles. This is known as outbreak testing, because it seeks to identify cases that might be part of an emerging outbreak.

44. Third, surveillance testing is used to monitor for workplace transmission when rising infection rates in the surrounding community increase the odds of an outbreak at the plant. This form of testing is tied to the area's "positivity rate"—the percentage of tests that are positive, which is calculated as a rolling average. A typical design for surveillance testing is to routinely test all or a sample of the workforce whenever the local positivity rate exceeds a certain threshold, usually 5%.[31]

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sensitivity—A strategy for containment, N Engl J Med 383; 22 (Nov. 26, 2020); Sandmann et al., *Optimizing benefits of testing key workers for infection with SARS-CoV-2: A mathematical modeling analysis*, Clinical Infectious Diseases (July 7, 2020); Lyng et al., *Identifying optimal COVID-19 testing strategies for schools and businesses: Balancing testing frequency, individual test technology, and cost*, medRxiv preprint (Oct. 12, 2020), https://www.medrxiv.org/content/10.1101/2020.10.11.20211011v2.full.pdf.

[31] For instance, the CDC recommends "weekly screening testing of select groups" when the community positivity rate exceeds 5%. Ctr. for Disease Ctrl. & Prevention, *CDC guidance for expanded screening testing to reduce silent spread of SARS-CoV-2* (updated Dec. 1, 2020), https://www.cdc.gov/coronavirus/2019-ncov/php/open-america/expanded-screening-testing.html.

45. These are basic procedures shared by most workplace testing regimes of which I am aware.

46. If Noah's Ark begins an onsite testing program, I am available to advise the company on its design. Typically, local health departments can also provide assistance to large workplaces for the design and implementation of COVID-19 testing programs.

47. Many companies offer testing services to businesses and other institutions. Companies like Quest Diagnostics, LabCorp, Abbott, and Vault Health have laboratories that can process COVID-19 tests in 1-2 days.[32] On-site antigen testing can also be used to perform tests quickly and is less expensive than PCR testing.[33]

48. Testing companies can either send contractors to administer tests onsite, or process tests administered by a business's onsite medical staff. In my experience advising workplaces throughout pandemic, testing services are easy and fast to procure.

Practices at the Noah's Ark Plant in Hastings, Nebraska

49. In preparing this declaration, I have reviewed a number of materials related to current conditions in the Noah's Ark beef processing plant in Hastings, Nebraska. In particular, I have reviewed all of the plaintiffs' declarations submitted in the case, the safety policies the company distributed to its workers, and the OSHA complaint submitted by one of the plaintiffs on August 30, 2020.

50. Based on these materials, I have grave concerns about the lack of safety precautions at Noah's Ark. The declarations and OSHA complaint describe a total lack of

[32] See, for example, Vault, *COVID-19 testing for organizations*, https://www.vaulthealth.com/covid/corporate; Quest Diagnostics, *Quest Diagnostics launches COVID-19 workforce testing services* (May 27, 2020), https://bit.ly/2VgekHL

[33] See U.S. Food & Drug Admin., *Coronavirus Disease 2019 testing basics* (describing "rapid, point-of-care diagnostic tests"), https://www.fda.gov/consumers/consumer-updates/coronavirus-disease-2019-testing-basics.

distancing, soiled masks leading workers to lower or remove their masks, people continuing to work despite clear COVID-19 symptoms, and no onsite testing. Even one of these would present a serious risk of COVID-19 transmission.

51. The documents I have reviewed suggest that hundreds of workers are crowded together indoors for at least 8 hours at a time, with little space and often no barriers between them, and no testing program to identify spikes. That alone would make this one of the most dangerous workplaces I have encountered since the pandemic began. The documents also describe wet masks that are often lowered, and sick-leave practices that encourage people to work while they have COVID-19 symptoms. These conditions are extremely likely to spread COVID-19.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Date: 12/3/20

Robert Harrison

Robert Jay Harrison, M.D., M.P.H.

Curriculum Vitae

Personal information

Birthdate: September 14, 1954 Freeport, NY

Present address: University of California, San Francisco
2330 Post Street, Suite 460
San Francisco, CA 94115

Telephone: (415) 885-7580 Cell: (415) 717-1601
FAX: (415) 821-9934
Email: robert.harrison@ucsf.edu

Current positions

Clinical Professor of Medicine
University of California, San Francisco

Chief, Occupational Health Surveillance and Evaluation Program
California Department of Public Health

Current major responsibilities

Attending Physician, UCSF Occupational Health Services
University of California, San Francisco

Attending Physician, Blood Borne Pathogen Program
University of California, San Francisco

Director, Occupational Health Internship Program
Association of Occupational and Environmental Clinics

Associate Director, UCSF Occupational and Environmental Medicine Residency Program

Education

1971-1975	B.A.	University of Rochester
1975-1979	M.D.	Albert Einstein College of Medicine
1982-1983	M.P.H.	University of California, Berkeley

Postgraduate medical training

1979-1980	Medical Intern, Internal Medicine Residency Program, Mount Zion Hospital, San Francisco
1980-1982	Medical Resident, Internal Medicine Residency Program, Mount Zion Hospital, San Francisco
1982-1984	Resident in Occupational Medicine, Department of Medicine, University of California, San Francisco

Previous professional experience

1982-1984	Attending Physician, Center for Municipal Occupational Safety and Health, San Francisco General Hospital
1983-1984	Acting Chief, Occupational Health Clinic, San Francisco General Hospital
1983-1985	Attending Physician, Medical Service, San Francisco General Hospital
1984-1989	Physician, General Medicine Group Practice, UCSF
1985-1992	Assistant Clinical Professor of Medicine, UCSF
1994-1995	Acting Chief, Occupational Health Branch California Department of Health Services
1984-1998	Medical Director, Occupational Medicine Clinic University of California, San Francisco
1985-1998 2004-2006	Medical Director, UCSF Employee Health Services
2002-2006	Medical Director, Community Occupational Health Program

Honors, Memberships and Licenses

1975	Phi Beta Kappa
1979	Alpha Omega Alpha
1979-present	Physicians for Social Responsibility
1980-present	Medical License, State of California #G043031
1982	Certified, American Board of Internal Medicine

1982-present	American Public Health Association
1982-present	Western Occupational and Environmental Medicine Association
1983-present	American College of Occupational and Environmental Medicine
1984	Certified, American Board of Preventive Medicine in Occupational Medicine
1986-1998	Infection Control Committee, UCSF
1988-1998	Hospital Safety Committee, UCSF
1989-1992	Biosafety Committee, UCSF
1989-1999	Independent Medical Examiner, Division of Industrial Accidents, State of California
1989-1992	Solid Waste Advisory Commission, City of San Francisco
1990-2000	AIDS Coordinating Council, UCSF
1990-1993	Health Hazards of Smoke technical panel, National Wildfire Coordinating Group
1992-2000	International Commission on Occupational Health
1991-2003	Program site reviewer, National Institute for Occupational Safety and Health
1991-1995	ANSI Z365 Accredited Standards Committee: Control of Cumulative Trauma Disorders
1992-2002	Communicable Diseases Advisory Committee, UCSF
1993-present	Qualified Medical Evaluator, Division of Workers Compensation, State of California
1994-1996	Chair, Tuberculosis Exposure Control Plan Task Force, UCSF
1994-1996	Executive Board, Society for Occupational and Environmental Health
1995-2005	Special Emphasis Panels, National Institute for Occupational Safety and Health
1996, 1998, 2000	Reverse Site Visit Panel, National Institute for Occupational Safety and Health
1998-2002	UC Office of the President – Environmental, Safety and Health Panel
1997-present	Center for Occupational and Environmental Health Continuing Medical Education Committee
1997-present	Occupational Health Workgroup, Council of State and Territorial Epidemiologists
1998-2002	Surveillance Planning Workgroup, National Institute for Occupational Safety and Health
1998-present	Consultant, U.S. Occupational Safety and Health Administration
2001	American Lung Association Clean Air Award
2001-2004	NIOSH/DOE Physician Panel
2002-2008	Executive Committee, Council of State and Territorial Epidemiologists
2002-2004	Governing Council, American Public Health Association
2002	CalOSHA Advisory Committee on Heat Stress
2002	CalOSHA Advisory Committee on Repetitive Motion Injuries

2003-2006	Occupational Health Representative, California Occupational Safety and Health Standards Board
2004	Western Occupational and Environmental Medicine Association, Jean Spencer Felton Award for Excellence in Scientific Writing
2005-2006	National Public Health Leadership Institute
2006-present	National Institute for Occupational Safety and Health – NORA Sector Council on Health Care and Social Services
2006-2017	Board of Directors, Street Level Health Project
2006-2007	President, Council of State and Territorial Epidemiologists
2007-2008	Chair, Occupational Health Section, American Public Health Association
2008	City of San Francisco - Synthetic Playfields Task Force
2008-present	Board of Directors, WorkSafe
2009-2016	Advisory Board, United Support and Memorial for Workplace Fatalities
2009-present	Advisory Board, Labor Occupational Health Program
2010-present	Collegium Ramazzini
2010-2016	Board of Directors, Workers Injury Law and Advocacy Group
2010-2013	NIOSH Board of Scientific Counselors
2011	Institute of Medicine - Occupational Information and Electronic Health Records
2011-2016	NIOSH World Trade Center Scientific and Technical Advisory Committee
2013-present	Board of Directors, Association of Occupational and Environmental Clinics
2016	Pump Handle Award, Council of State and Territorial Epidemiologists
2016-present	CalOSHA Health Effects Advisory Committee
2017	WorkSafe Public Health Hero award
2018-present	National Institute for Occupational Safety and Health – NORA Sector Council on Traumatic Injury Prevention
2018	Alice Hamilton Award - American Public Health Association

Publications

Peer-reviewed journals

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Current research activities

National Institute for Occupational Safety and Health - Public Health Institute: "California Occupational Safety and Health Surveillance" (Principle Investigator 10%; $695,000; 7/1/19– 6/30/20).

National Institute for Occupational Safety and Health – Council of State and Territorial Epidemiologists: "Western States Occupational Network Meeting" (Principal Investigator 5%; $30,000; 8/1/19-7/31/20).

National Institute for Occupational Safety and Health – Association of Occupational and Environmental Clinics: "Occupational Health Internship Program" (Principal Investigator 5%; $143,000; 7/1/19-6/30/20).

California Breast Cancer Research Program – Public Health Institute: "Occupational Chemical Exposures in California and Breast Cancer Risk" (Principal Investigator 5%; $1,398,624; 1/1/16 – 1/31/21).

Rev. March 2020