UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TENNESSEE

Favian Busby, Russell Leaks, and Joseph Nelson, *on their own behalf and on behalf of those similarly situated*; Petitioners-Plaintiffs, v. Floyd Bonner, Jr., *in his official capacity*, Shelby County Sheriff, and the Shelby County Sheriff's Office, Respondents-Defendants.	Civil Action No. 2:20-cv-2359-SHL-atc

SUPPLEMENTAL DECLARATION OF DR. HOMER D. VENTERS, M.D.

I, Homer Venters, pursuant to 28 U.S.C.§ 1746, declare as follows:

1. The Court has admitted me as an expert in correctional facility response to infectious disease including COVID-19 in this case. *See* Hr'g Tr. 113:1–10, ECF No. 108 Pg. ID 2005 (July 10, 2020). I am a physician, internist, and epidemiologist with over a decade of experience in providing, improving, and leading health services for incarcerated people. *See* ECF Nos. 48; 48-1; 103-1. A copy of my curriculum vitae is attached at ECF Nos. 48-1 and 103-1 and includes my publications as well as a listing of depositions and testimony I have provided.

2. I have reviewed this Court's August 7, 2020 Order in which the Court called for further evidence regarding how far COVID-19 spreads in the air in an indoor facility. *See* ECF No. 124, Pg. ID 2807. I provide this declaration to provide the Court with additional evidence that COVID-19 spreads through aerosol particles up to distances greater than 10'.

A. COVID-19 Is Transmitted In Aerosolized Droplets Up to Sixteen Feet.

3. As I explained in my report filed in this case and in testimony before the Court, because COVID-19 is transmitted through aerosolized respiratory droplets, housing COVID-positive patients in cells with open bars, and using such cells for quarantine or isolation, allows

the virus to spread and is ineffectual at "timing-out" the virus. *See* ECF No. 103-1, ¶ 15(b) Pg. ID 1644; ¶¶ 22–23 Pg. ID 1646–47.[1]

4. When people infected with COVID-19 breathe out, cough, sneeze, speak or even clear their throats, they expel droplets of varying size into the air around them. Large droplets will remain in the air for seconds to minutes, falling to the ground or other surfaces. Smaller droplets will remain in the air for far longer periods of time, and recent research outlined below confirms earlier concerns that—like measles and tuberculosis—small droplets of COVID-19 virus are aerosolized, meaning that they are small enough to remain airborne for hours.[2] The consequences of COVID-19 droplets being aerosolized is not simply that they remain in the air for a longer period of time, but that they travel far greater distances. The potential for infection through this mechanism is greatly enhanced when the infected person is indoors, where there is much less movement and exchange of air. In formulating their recommendations that care of patients with known or suspected COVID-19 include N95 respirators and other PPE utilized for airborne transmission, the CDC specifically cites aerosolized transmission in the mechanism by which staff can become infected.[3]

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1 Using open-bar cells also creates a significant risk that security and medical staff, who are regularly within six feet of these units, will contract and spread the virus. *See* Hr'g Tr. 188:7–24 ECF No. 108 Pg. ID 2080 (July 10, 2020) (noting frequency with which patients and staff would come up close to one another through the open cells bars for various encounters).

2 *See Transmission of Measles*, Ctrs. for Disease Prevention, https://www.cdc.gov/measles/transmission.html (last updated Feb. 5, 2018); World Health Org., The Health Academy: Avoiding Tuberculosis, https://www.who.int/healthacademy/WHO_TB.pdf?ua=1.

3 *See Clinical Questions about COVID-19: Questions and Answers*, Ctrs. for Disease Prevention, https://www.cdc.gov/coronavirus/2019-ncov/hcp/faq.html#Infection-Control (last updated Aug. 4, 2020).

5. Aerosolized respiratory droplets released during exhalation, talking, coughing, or singing, linger in the air and transmit COVID-19.[4] 239 scientists from 39 countries have confirmed that smaller particles can carry viable doses of the virus and transmit the disease. *See* Ex. 1. The World Health Organization agrees.[5] As a result, the virus "lingers in the air indoors" where it is readily transmitted. *See* Ex. 2; ECF No. 107-1, Pg.ID 1857 n. 2. COVID-19 remains infectious in aerosolized respiratory droplets for as long as three hours. See Ex. 3 at 1. Early in the pandemic, studies from China found that individuals could be infected simply by being in the same restaurant as a person with COVID-19, despite having had no direct or indirect contact with the COVID-positive patron also eating there. See Exs. 4 at 2 and 5 at 12–15. One of these studies also confirmed that air-conditioned ventilation infected ten people who ate at the restaurant. See Ex. 4 at 2. In addition, aerosolized respiratory droplets cause surface contamination that can lead to further infections. *See* Ex. 6 at 3–4.

6. Since I wrote my report and testified in this case, further scientific evidence has substantiated my concerns regarding the Jail's isolation and quarantine practices. In a recent study of aerosols in the hospital rooms of COVID-19 patients, a research team at the University of Nebraska succeeded in isolating live virus from aerosols collected at a distance of 7' to 16' from patients with COVID-19. Of the aerosol samples collected, 63.2 percent of in-room air samples and 58.3 percent of hallway air samples tested positive for the virus. *See* Ex. 7 at 3. The study found that aerosols were positive for COVID-19 although patients had not coughed before the

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[4] *See* Linda Morawska & Donald K. Milton, It Is Time to Address Airborne Transmission of COVID-19, Accepted Manuscript, Oxford University Press for the Infectious Diseases Society of America (July 6, 2020), https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciaa939/5867798.

[5] *See, e.g.*, Lindsey C. Marr, Ph.D., *Yes, the Coronavirus is in the Air* (July 30, 2020), New York Times https://www.nytimes.com/2020/07/30/opinion/coronavirus-aerosols.html.

samples were obtained. Another recent study confirms that COVID-19 is transmitted by exhaling alone—coughing, sneezing, or talking are not required—and concluded that "airborne transmission of SARS-CoV-2 plays a major role in COVID-19 spread, especially during the early stages of the disease". *See* Ex. 8 at 1, 5. These findings are important because they indicate that prior focus on respiratory procedures that induced coughing as the main threat to aerosolized COVID-19 transmission was far too limited.

B. A Further Inspection Is Necessary to Determine Whether The Shortcomings in the Jail's "Timing-Out" Strategy Are Remediable.

7. Using open-barred cells for isolation and quarantine is ineffectual because of aerosolized transmission over 10'. The Jail's "timing out" strategy cannot prevent the spread of the virus so long as open-barred units are used for quarantine and isolation. As I explained in my report, housing COVID-19 positive individuals in open-barred cells is "a deviation from CDC recommendations[6] and basic infection control principles." ECF No. 107-1, Pg.ID 1856. These shortcomings must be remedied as soon as possible.

8. High-flow air extractors with filtration might help. *See* Ex. 9 at 2. Acrylic plastic barriers, although they do not prevent aerosol transmission, *see* Ex. 10 at 2, may provide some protection. Increasing the humidity levels in the Jail might reduce aerosolized transmission. *See* Ex. 11 at 2–3. Each of these interventions can also impact other aspects of health and jail operations, including environmental temperatures, communication among staff and detainees and

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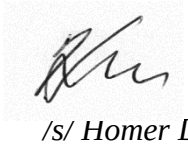
[6] Indeed, in its July 14, 2020 guidance, the CDC notes that the quarantine of multiple individuals should occur "separately, in single cells with solid walls (i.e., not bars) and solid doors that close fully." Centers for Disease Control, Guidance on Management of Coronavirus Disease 2019 (COVID-19) in Correctional and Detention Facilities (updated July 22, 2020), https://www.cdc.gov/coronavirus/2019-ncov/community/correction-detention/guidance-correctional-detention.html#Social_dist_housing. In fact, the CDC would recommend transferring individuals to another facility before it would recommend the use of cells with open barred doors to house multiple individuals in close proximity, as is done throughout the lower level of the Shelby County Jail for its post-arrest "quarantine." *Id.*

movement. To determine which solution, if any, is viable, the Jail should permit an environmental engineer expert in aerosolized virus transmission to inspect and advise the Jail on best practices. Short of that, Michael Brady, the Court's Independent Inspector, should visit the Jail as soon as possible and make further recommendations to contain the aerosolized transmission of the virus and to ascertain whether the Jail can possibly establish an effective timing-out strategy given what we now know about the highly infectious nature of COVID-19 and the distances over which it is transmitted through aerosolized respiratory droplets.



Dated this 8th day of September, 2020 */s/ Homer D. Venters*

Dr. Homer D. Venters, M.D.