

**IN THE SUPREME COURT OF TENNESSEE
AT NASHVILLE**

Earle J. Fisher, et al.,
Plaintiffs-Appellees,

Benjamin Lay, et al.,
Plaintiffs-Appellees,

v.

v.

Tre Hargett, et al.,
Defendants-Appellants

Mark Goins, et al.,
Defendants-Appellants

No. M2020-00831-SC-RDM-CV

No. M2020-00832-SC-RDM-CV

**On Appeal from the Chancery Court for Davidson County
No. 20-0453-III**

**BRIEF OF AMICI CURIAE DOCTORS
AND PROFESSORS SPECIALIZING IN
EPIDEMIOLOGY AND INFECTIOUS DISEASES**

Accompanied by a Motion for Leave to File Brief Amici Curiae

Stephen J. Zralek, BPR# 018971
BONE MCALLESTER
NORTON PLLC
Nashville City Center
511 Union Street, Ste. 1600
Nashville, TN 37219
Telephone: (615) 238-6300
szralek@bonelaw.com

Debo P. Adegbile*
WILMER CUTLER PICKERING
HALE AND DORR LLP
7 World Trade Center
250 Greenwich Street
New York, NY 10007
Telephone: (212) 230-8800
debo.adegbile@wilmerhale.com

**Pro Hac Vice pending*

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OTHER AUTHORITIES

American Psychological Association, *Who Are Family Caregivers?* (2011), <https://www.apa.org/pi/about/publications/caregivers/faq/statistics> 20

Bathel, Michale and Galen Stocking, *Older People Account for Large Shares of Poll Workers and Voters in U.S. General Elections*, Pew Research Center (Apr. 6, 2020), <https://www.pewresearch.org/fact-tank/2020/04/06/older-people-account-for-large-shares-of-poll-workers-and-voters-in-u-s-general-elections> 29

Beall, Pat & John Moritz, *COVID Endangers the Volunteers Who Make Your Vote Count*, USA Today (June 18, 2020), <https://www.usatoday.com/story/news/investigations/2020/06/18/coronavirus-election-workers-often-higher-age-risk/3206270001> 37

Brown, Mark & Tina Sfondeles, *South Side Man Died of COVID-19 Two Weeks After Serving as Election Judge: ‘Life is Too Short’*, Chicago Sun Times (Apr. 13, 2020), <https://chicago.suntimes.com/politics/2020/4/13/21219934/illinois-election-day-judge-poll-worker-death-covid-19-primary-coronavirus-burke-pritzker> 38

CDC, *Adult Obesity Prevalence Maps* (Oct. 29, 2019), <https://www.cdc.gov/obesity/data/prevalence-maps.html> 18

CDC, *COVID-19 in Racial and Ethnic Minority Groups* (June 25, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/racial-ethnic-minorities.html> 18-19

CDC, *How COVID-19 Spreads*, (June 16, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html> 15, 16

CDC, *Interim Clinical Guidance for Management of Patients with Confirmed Coronavirus Disease (COVID-19)* (June 30, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html> 17

CDC, *Frequently Asked Questions About SARS* (May 3, 2005), <https://www.cdc.gov/sars/about/faq.html> 16

CDC, *Frequently Asked Questions: Symptoms & Testing* (July 3, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/faq.html#Symptoms-&-Testing>..... 23

CDC, *For Parents: Multisystem Inflammatory Syndrome in Children (MIS-C) Associated with COVID-19* (May 20, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/children/mis-c.html>..... 19

CDC, *People Who Are at Increased Risk for Severe Illness* (June 25, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-higher-risk.html>..... 18

CDC, *Considerations for Election Polling Locations and Voters* (June 22, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/community/election-polling-locations.html>..... 29, 33, 34

CDC, *Strategies to Optimize the Supply of PPE and Equipment* (May 18, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/index.html> 31

CDC, *Symptoms of Coronavirus* (May 13, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>..... 13, 17, 18

Center for Systems Science and Engineering at Johns Hopkins University, *COVID-19 Dashboard* (July 8, 2020), <https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6> 12, 14, 18

Cotti, Chad, et al., *The Relationship Between In-Person Voting and COVID-19: Evidence from the Wisconsin Primary*, Nat'l Bureau of Econ. Research (May 2020), <https://www.nber.org/papers/w27187.pdf>..... 35-36

Denis, Alex, *Rural Counties See a Spike in COVID-19 Cases*, WKRN (July 2, 2020), <https://www.wkrn.com/community/health/coronavirus/rural-counties-see-a-spike-in-covid-cases> 28

Dhand, Rajiv & Jie Li, *Coughs and Sneezes: Their Role in Transmission of Respiratory Viral Infections, Including SARS-CoV-2*, Am. J. Resp. & Critical Care (June 16, 2020), <https://www.atsjournals.org/doi/pdf/10.1164/rccm.202004-1263PP>..... 32

Ercolano, Patrick, *A Coronavirus Vaccine is in the Works—But It Won't Emerge Overnight*, Johns Hopkins University (April 16, 2020), <https://hub.jhu.edu/2020/04/16/coronavirus-vaccine-timeline> 22

Hamner, Lea et al., *High SARS-CoV-2 Attack Rate Following Exposure at a Choir Practice — Skagit County, Washington*, 69 Morbidity & Mortality Wkly. Rep., March 2020 (May 12, 2020), <https://www.cdc.gov/mmwr/volumes/69/wr/mm6919e6.htm>..... 16

Isenstadt, Alex, *Trump Drives Massive Turnout in Primaries Despite Token Opposition*, Politico (Feb. 16, 2020), <https://www.politico.com/news/2020/02/16/trump-campaign-voter-turnout-115338> 28

Jeanes, Annette et al., *The Development of Hand Hygiene Compliance Imperatives in an Emergency Department*, 46 Am. J. Infection Control (April 2018), <https://pubmed.ncbi.nlm.nih.gov/29269167> 34

Johns Hopkins University, *Cases, Deaths, and Testing in All 50 States* (July 8, 2020),
<https://coronavirus.jhu.edu/testing/states-comparison/testing-state-totals-by-pop> 21

Kissler, Stephen M., et al., *Projecting the Transmission Dynamics of SARS-CoV-2 Through the Postpandemic Period*, 368 *Sci.* 860 (May 22, 2020),
<https://science.sciencemag.org/content/368/6493/860> 39

Kruesi, Kimberlee, *Governors Stress “Personal Responsibility” Over Virus Orders*, NBC Chicago (July 4, 2020),
<https://www.nbcchicago.com/news/coronavirus/governors-stress-personal-responsibility-over-virus-orders/2299821/> 32

Levine, Carrie, *Elderly Poll Workers Run U.S. Elections. But COVID-19 Will Keep Legions Home*, NBC News (May 13, 2020), <https://www.nbcnews.com/politics/2020-election/elderly-poll-workers-run-u-s-elections-covid-19-will-n1205761> 29

Lipsitch, Marc, *Seasonality of SARS-CoV-2: Will COVID-19 Go Away on Its Own in Warmer Weather?*, Center for Communicable Disease Dynamics, Harv. T.H. Chan Sch, Pub. Health, <https://ccdd.hsph.harvard.edu/will-covid-19-go-away-on-its-own-in-warmer-weather> 39

Lopez, German, *The Democratic Voter Surge Was Very Real on Super Tuesday*, Vox (Mar. 4, 2020),
<https://www.vox.com/policy-and-politics/2020/3/4/21164518/super-tuesday-results-voter-turnout> 28

Man, Anthony, *Two Broward Poll Workers, Including One Who Handled Voters’ Driver Licenses, Test Positive for Coronavirus*, South Fla. Sun Sentinel (Mar. 26, 2020),
<https://www.sun-sentinel.com/coronavirus/fl-ne-broward-elections-poll-workers-coronavirus-20200326-wmg775dvjc5jis2oagxlpml-story.html> 37

Matrajt, Laura & Tiffany Leung, *Evaluating the Effectiveness of Social Distancing Interventions to Delay or Flatten the Epidemic Curve of Coronavirus Disease*, 26 *Emerging Infectious Diseases* (Aug. 2020), https://wwwnc.cdc.gov/eid/article/26/8/20-1093_article 24

Prather, Kimberly A. et al., *Reducing Transmission of SARS-CoV-2*, 368 *Sci.* (June 26, 2020), <https://science.sciencemag.org/content/early/2020/05/27/science.abc6197> 27

Previti, Emily, *A Philly Poll Watcher Got Coronavirus, but the City Isn't Notifying Voters*, *Penn Live* (June 24, 2020), <https://www.pennlive.com/news/2020/06/a-philly-poll-watcher-got-coronavirus-but-the-city-isnt-notifying-voters.html> 36

Soumya, Sen, et al., *Association of Stay-at-Home Orders With COVID-19 Hospitalizations in 4 States*, 323 *J. Am. Med. Ass'n* (May 27, 2020), <https://jamanetwork.com/journals/jama/fullarticle/2766673> 24

Tennessee Department of Health, *Downloadable Datasets*, <https://www.tn.gov/health/cedep/ncov/data/downloadable-datasets.html> 12, 19, 20, 25

Tennessee Department of Health, *Epi Curves, Case Counts by Region or County* (July 8, 2020), <https://www.tn.gov/health/cedep/ncov/data/epi-curves.html> 24

Tennessee Department of Health, *Epidemiology and Surveillance Data* (July 7, 2020), <https://www.tn.gov/content/tn/health/cedep/ncov/data.html>... 12, 39

Tennessee Executive Order No. 22, *An Order Directing Tennesseans to Stay Home Unless Engaging in Essential Activities to Limit Their Exposure to and Spread of COVID-19* (Mar. 30, 2020), <https://publications.tnsosfiles.com/pub/execorders/exec-orders-lee22.pdf> 24

Tennessee Executive Order No. 30, *An Order Allowing Tennesseans to Return to Work Safely While Encouraging Continued Adherence to Health Guidelines to Limit the Spread of COVID-19* (Apr. 28, 2020), <https://publications.tnsosfiles.com/pub/execorders/exec-orders-lee30.pdf>..... 24

Tennessee Secretary of State’s Office, Division of Elections, *Tennessee Election COVID-19 Contingency Plan* (Apr. 23, 2020), <https://www.courthousenews.com/wp-content/uploads/2020/05/COVID-19-Plan.pdf> 30, 31, 32, 33

Tennessee Secretary of State’s Office, Division of Elections, *Absentee Voting*, <https://sos.tn.gov/products/elections/absentee-voting>..... 30

U.S. Census Bureau, *QuickFacts Tennessee* (July 1, 2019), [quickfacts/fact/table/TN/PST045219](https://www.census.gov/quickfacts/fact/table/TN/PST045219) 19

U.S. Election Assistance Commission, *Vendor and Manufacturer Guidance on Cleaning Voter Machines and Other Technology*, <https://www.eac.gov/election-officials/vendor-and-manufacturer-guidance-cleaning-voting-machines-and-other-election> 33

Woodward, Aylin, *Coronavirus Super-Spreader Events All Have Notable Similarities—and They Reveal the Types of Gatherings We Should Avoid for Years*, *Business Insider* (May 14, 2020), <https://www.businessinsider.com/coronavirus-super-spreader-events-reveal-gatherings-to-avoid-2020-5> 16

INTRODUCTION & IDENTITY OF AMICI

Amici curiae—Dr. David Aronoff, Dr. Nina Fefferman, Dr. James E.K. Hildreth, Dr. William Schaffner, Dr. Thomas Talbot, Dr. Edwin Trevathan, Dr. C. William Wester—are leading doctors and professors in the state of Tennessee specializing in infectious diseases and epidemiology, a scientific field that studies the spread, causes, and control of infectious diseases and other factors relating to public health. Among them, amici have published hundreds of articles in peer-reviewed journals on topics relating to infectious diseases; have worked in full-time or advisory roles at the National Institutes of Health, the Centers for Disease Control and Prevention (“CDC”), the World Health Organization, and other state and federal governmental and non-governmental entities; and have been engaged in studying or responding to recent viral outbreaks including the H1N1 virus in 2009, the Ebola virus in 2014, the Zika virus in 2016, and the current COVID-19 pandemic. Their biographies are attached as Appendix A.

Amici have worked on issues relating to infectious diseases throughout their entire careers, and are presently engaged in studying and combating the COVID-19 pandemic from a variety of perspectives. Based on that work, they have concluded that this pandemic poses unique risks to the public; that, in light of the high transmissibility of the virus, those risks are particularly acute at polling locations; and that governments should avoid compelling voters to appear at such locations when alternatives are available. They submit this brief to provide the Court with an overview, based on their experience and expertise, of the

public health issues relevant to this case and in particular how those issues implicate polling locations.

This brief has been filed conditionally with a motion for leave.¹

STATEMENT OF THE CASE

This litigation concerns the rights of Tennesseans to vote without endangering themselves and the public health by going in person to polling locations during the COVID-19 pandemic. On May 15, 2020, Tennessee voters Benjamin William Lay, Carole Joy Greenawalt, and Sophia Luangrath (the “appellees”) filed a complaint, naming as defendants Governor William Lee, Secretary of State Tre Hargett, and Coordinator of Elections Mark Goins (the “appellants”). In their complaint and in a May 22 motion for a temporary injunction, appellees argued that denying voters the option of voting absentee during the COVID-19 pandemic violates the fundamental right to vote protected by the Tennessee Constitution.

On June 1, the appellants filed an opposition, dismissing appellees’ arguments regarding “the risks of COVID-19 transmission during elections” as “little more than speculation and abstract concerns.” Resp. in Opp. to Plfs.’s Mot. for Temp. Injunction, at 20 (June 1, 2020). On June 4, the Chancery Court issued a temporary injunction, ordering appellants to provide Tennessee voters the option of casting an absentee ballot

¹ No party assisted in the drafting of this brief. No party made any financial contribution toward the preparation of this brief, which was prepared by the undersigned counsel pro bono.

during the pandemic. Among other bases, the Chancery Court credited the testimony of several physicians that appellants’ restrictive interpretation of absentee ballot eligibility “would create significant, unwarranted risks to individuals and communities,” and that “although Tennessee is starting to reopen, the Pandemic is still with us, and its severity will persist through the summer, as well as the fall.” Mem. & Order Granting Temp. Injunction, at 19 (June 4, 2020). Appellants moved for this Court to assume jurisdiction on June 12, and this Court granted that motion on June 24.

SUMMARY OF ARGUMENT

The relief granted by the Chancery Court—a temporary injunction requiring the state to provide all eligible voters the option of voting absentee for the duration of the COVID-19 pandemic—is necessary in light of the unique dangers posed by this virus and the features of polling locations that make them prime sites for transmission.

First, the virus has several features which collectively pose a unique threat to the public. It is highly contagious, spreading easily from person to person through a population with no preexisting immunity. It is severe and deadly, posing serious risks to all people and in particular to certain high-risk populations. And it is difficult to prevent, with vaccines and testing unlikely to control spread in the near future and social distancing providing the most effective method for preventing spread at present. *Infra* pp. 12-26.

Second, polling locations are particularly susceptible to virus transmission. To vote in person, large numbers of people must gather,

often in long and slow-moving lines and in a confined space, and touch common surfaces and objects. While mitigation measures—such as the wearing of masks and the cleaning and disinfecting of surfaces—can reduce risk, none is as effective as giving voters the option of avoiding these locations by voting absentee. Mitigation measures should be seen as complements to, rather than substitutes for, the option of absentee voting. *Infra* pp. 26-39.

ARGUMENT

I. COVID-19 Is a Deadly Disease Caused by a Highly Infectious Virus that Can Be Effectively Prevented Only Through Social Distancing.

In a matter of months, the COVID-19 pandemic has infected over 3 million Americans—including over 50,000 Tennesseans—and claimed the lives of over 125,000 Americans—including approximately 600 Tennesseans.² The pandemic has touched every region of Tennessee, rural and urban alike, with all 95 counties experiencing at least 5 confirmed cases and half of Tennessee’s counties experiencing over 100 cases.³ These individuals have been infected with a respiratory virus known as SARS-CoV-2, which causes the disease known as COVID-19.

² Ctr. for Systems Science and Engineering at Johns Hopkins University, *COVID-19 Dashboard*, <https://coronavirus.jhu.edu/map.html>; Tenn. Dep’t of Health, *Epidemiology and Surveillance Data*, <https://www.tn.gov/content/tn/health/cedep/ncov/data.html>.

³ Tenn. Dep’t of Health, *Downloadable Datasets, County New*, <https://www.tn.gov/health/cedep/ncov/data/downloadable-datasets.html> (49 of 95 counties with confirmed cases over 100 as of July 8, 2020).

The virus is a respiratory virus—primarily affecting the organs and structures that allow humans to breathe—with patients typically presenting with fever, cough, and shortness of breath, which may escalate to respiratory failure and other serious, life-threatening complications.⁴ See CDC, *Symptoms of Coronavirus* (May 13, 2020).⁵

Drawing on decades of experience, and on their recent work responding to this pandemic, amici believe that three aspects of this virus may be relevant to the Court in deciding the issues before it: First, the virus is highly contagious, due to a combination of factors including that the human population has no preexisting immunity; that the virus spreads easily through tiny droplets expelled when a person speaks, coughs, or sneezes; and that individuals who may not yet know they are infected can transmit the virus. Second, the virus is severe and deadly, posing risks to all people and in particular to the elderly; to individuals with preexisting chronic diseases, disabilities, and conditions; and to members of racial and ethnic minority populations. Third, infection with

⁴ There is growing evidence that the virus and the disease it causes also affect the vascular (or circulatory) system—the vessels that carry blood throughout the body. See Maximilian Ackermann et al., *Pulmonary Vascular Endothelialitis, Thrombosis, and Angiogenesis in Covid-19*, *New England J. Medicine* (May 21, 2020), <https://www.nejm.org/doi/full/10.1056/NEJMoa2015432>; Ajay K. Gupta et al., *Current Perspectives on Coronavirus Disease 2019 and Cardiovascular Disease*, *J. Am. Heart Ass’n* (Apr. 29, 2020).

⁵ Available at <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>.

the virus is at present difficult to prevent, with vaccines unlikely to be available in the near future and behavioral interruption of transmission (e.g., minimizing person-to-person interactions) offering the most consistently effective method of preventing increasing case incidence at present. In combination, these factors make this virus unlike any other that has circulated in the American population in the last 100 years, justifying the Chancery Court’s temporary injunction.

A. The Virus Is Highly Contagious.

The virus has spread rapidly—from the first human cases in late 2019 to, as of this writing, over ten million confirmed cases worldwide (a figure that likely represents only a fraction of the true number infected).⁶ Generally, the rate at which a virus spreads may be driven by a variety of factors, including but not limited to the level of preexisting immunity in the population; the timetable on which an individual becomes infected, becomes contagious, and manifests symptoms; and the manner in which the virus is spread from person to person. In the case of this virus, each of these factors serves to explain its rapid rate of spread.

First, this is a “novel” virus, or a virus to which no human has previously been exposed and had the opportunity to become immune.⁷

⁶ See Ctr. for Systems Science and Engineering at Johns Hopkins University, *COVID-19 Dashboard*, *supra* note 2.

⁷ As discussed *infra* p. 23, it is not yet known whether individuals previously infected with the virus become immune, or for how long any such immunity would last.

Accordingly, the entire population was susceptible to this virus when it emerged in late 2019. That makes this virus distinct from viruses like, for example, certain strains of seasonal influenza, in which spread is slowed by the immunity of individuals who had previously been infected with related strains of influenza virus.

Second, the virus is easily transmitted from one person to another—more so than influenza viruses—infecting new individuals through tiny droplets that contagious individuals expel regularly when they speak, cough, sneeze, or the like. *See CDC, How COVID-19 Spreads* (June 16, 2020).⁸ The virus spreads most easily when these droplets are transferred directly from one person to another. The virus may also be transmitted through the touching of surfaces—for example, when an infected person touches a surface with a hand he or she has coughed into and then another person touches that same surface and then touches his or her face—although the extent of such transmission, including the time infectious amounts of the virus may linger on surfaces, is still being studied. *Id.* Transmission of the virus can occur in any location where there is close proximity between individuals, or in any location where multiple individuals touch the same surfaces. *Id.* While the degree to which an infected person spreads the virus to others depends on the precautions taken by that person, there have been numerous documented “super-spreader events,” at which a single person causes widespread

⁸ Available at <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html>.

infection to a large number of people, often as a result of being in an indoor space with a large number of people for an extended period of time.⁹

Finally, individuals who have become infected with the virus can transmit the virus before or without showing symptoms of COVID-19. *See* CDC, *How COVID-19 Spreads*, *supra* note 8. Many viruses can be spread by infected individuals only when those individuals have become symptomatic; for example, smallpox and the 2002 SARS virus. *See* CDC, *Frequently Asked Questions About SARS* (May 3, 2005).¹⁰ The virus that causes COVID-19, however, is spread by an infected individual who is not yet manifesting any symptoms—that is, people infected with the virus may spread it without knowing that they have it. *Id.* Compounding matters, this virus has a relatively long incubation period, or period between when an individual is first infected and when he or she begins

⁹ *See, e.g.*, Hamner, Lea et al., *High SARS-CoV-2 Attack Rate Following Exposure at a Choir Practice — Skagit County, Washington*, 69 *Morbidity & Mortality Wkly. Rep.* 606, March 2020 (May 12, 2020), <https://www.cdc.gov/mmwr/volumes/69/wr/mm6919e6.htm> (detailing incident in which between 53.3% and 86.7% of choir members were infected as result of a single infected person attending choir practice); Woodward, *Coronavirus Super-Spreader Events All Have Notable Similarities—and They Reveal the Types of Gatherings We Should Avoid for Years*, *Business Insider* (May 14, 2020), <https://www.businessinsider.com/coronavirus-super-spreader-events-reveal-gatherings-to-avoid-2020-5> (describing super-spreader events in Daegu, South Korea; Westchester, New York; Chicago, Illinois; Westport, Connecticut; Pasadena, California; and Skagit County, Washington).

¹⁰ Available at <https://www.cdc.gov/sars/about/faq.html>.

to show symptoms. CDC, *Interim Clinical Guidance for Management of Patients with Confirmed Coronavirus Disease (COVID-19)* (June 30, 2020).¹¹ As a result, an individual may spread the virus for several days before having any indication that he or she has been doing so. And some individuals may transmit the virus to others without *ever* themselves developing symptoms. Focusing efforts to interrupt transmission only on persons known to be infected, or symptomatic and infected, is not sufficient to stop the spread of the virus.

B. The Virus Poses Severe Risks to All People, Particularly but Not Limited to Certain High-Risk Populations.

The virus targets the human respiratory system and has presented a substantially higher fatality rate than other viruses that have circulated among the American public through similar means of transmission in recent decades. Individuals with confirmed cases have displayed a range of symptoms, and while the most severe symptoms have appeared most frequently in certain high-risk populations, all people are at risk of contracting severe cases.

The common symptoms are fever, cough, and shortness of breath; other identified symptoms include muscle aches, headaches, chest pain, diarrhea, coughing up blood, sputum production, runny nose, nausea, vomiting, sore throat, and loss of senses of taste and smell. *See* CDC, *Symptoms of Coronavirus*, *supra* note 5. Clinical manifestations may

¹¹ Available at <https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html>.

escalate to respiratory failure and other serious, life-threatening complications. *Id.* Due to the respiratory impacts of the disease, individuals may need to be put on oxygen, and in severe cases, patients may need to be intubated and put on a ventilator. Approximately 4.3% of Americans with confirmed cases of COVID-19 have died from it.¹²

People of every age can and have contracted COVID-19, including severe cases, but three groups in particular are at elevated risk. First, geriatric patients are at the greatest risk of severe cases, long-term impairment, and death. *See CDC, Symptoms of Coronavirus, supra* note 5. Second, those with weaker immune systems or with other pre-existing conditions, such as hypertension, certain heart conditions, lung diseases (*e.g.*, asthma), diabetes mellitus, obesity, and chronic kidney disease, are at high risk of a life-threatening COVID-19 illness. *See CDC, People Who Are at Increased Risk for Severe Illness* (June 25, 2020).¹³ Many of these are common conditions in the population. For example, 34.4% of Tennessee adults have obesity. *See CDC, Adult Obesity Prevalence Maps* (Oct. 29, 2019).¹⁴ Finally, information available to date shows that racial and ethnic minority populations, especially African Americans, are at a substantially elevated risk of developing life-threatening COVID-19 illnesses and of dying of COVID-19. *See CDC, COVID-19 in Racial and*

¹² Ctr. for Systems Science and Engineering at Johns Hopkins University, *COVID-19 Dashboard, supra* note 2.

¹³ Available at <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-higher-risk.html>.

¹⁴ Available at <https://www.cdc.gov/obesity/data/prevalence-maps.html>.

Ethnic Minority Groups (June 25, 2020).¹⁵ In Tennessee, the African-American share of COVID-19 deaths is *more than double* their share of the population: African Americans make up 17.1% of the population, 20.6% of COVID-19 cases, and 35.2% of COVID-19-related deaths.¹⁶

It is not yet fully understood which populations or preexisting conditions are at the greatest risk of developing severe cases. For example, while children have generally been believed to be less susceptible to severe cases of COVID-19, there is emerging evidence that children infected with the virus that causes COVID-19 may experience severe, even deadly, inflammation of the heart, lungs, kidneys, brain, skin, eyes, or gastrointestinal organs. See CDC, *For Parents: Multisystem Inflammatory Syndrome in Children (MIS-C) Associated with COVID-19* (May 20, 2020).¹⁷ Over the past several months, the share of new daily confirmed COVID-19 cases in Tennessee who are children has risen markedly.¹⁸ In April, an average of 2.1% of new daily confirmed cases were children ages 0 to 10 and 6.3% were ages 11

¹⁵ Available at <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/racial-ethnic-minorities.html>.

¹⁶ U.S. Census Bureau, *QuickFacts Tennessee* (July 1, 2019), <https://www.census.gov/quickfacts/fact/table/TN/PST045219>; Tenn. Dep't. of Health, *Downloadable Datasets, Race, Ethnicity, Sex*, *supra* note 3.

¹⁷ Available at <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/children/mis-c.html>.

¹⁸ See Tenn. Dep't. of Health, *Downloadable Datasets, Age*, *supra* note 3.

through 20; in June, those shares had approximately doubled, to 6.0% and 11.1%, respectively.¹⁹

Moreover, the high risk of severe cases faced by certain populations has implications for the ability to vote of individuals beyond those specific groups. Caregivers of children, the elderly, or individuals with preexisting conditions are likely to determine that the risks of exposing themselves—and by extension, the vulnerable individuals they care for—are too great to vote when their only option is voting in-person. Because the majority of familial caregivers are women, this effect would likely be felt disproportionately among female voters.²⁰

C. At Present, the Virus Can Effectively Be Prevented Only Through Social Distancing.

Generally, transmission of viruses long-established in the population may be prevented through, *inter alia*, testing and isolation of confirmed cases, vaccinations, and the presence of widespread (or “herd”) immunity in the population. As detailed below, these mechanisms are unlikely to prevent the spread of this virus in the near future. Accordingly, social distancing and related strategies are the only known effective measures for preventing the spread of the virus among the general public, with other measures such as the wearing of masks,

¹⁹ *Id.*

²⁰ American Psychological Association, *Who Are Family Caregivers?* (2011), <https://www.apa.org/pi/about/publications/caregivers/faq/statistics>.

handwashing, and the cleaning and disinfecting of surfaces helping to curb spread.

Testing for the virus is currently not available at a scale that would allow the identification and isolation of infected individuals to an extent sufficient to prevent further spread of the virus. Tennessee has performed relatively well compared to other states in terms of testing per capita,²¹ but Tennessee's testing regime has been insufficient to prevent further spread, due to a combination of factors including the spread of the virus within the population; the limitations on the availability of testing; the time it takes to arrange, undergo, and receive results from testing; and the long incubation period of the virus. Due to the possibility of asymptomatic transmission, *supra* p. 16-17, individuals may spread the virus for several days before even knowing of any reason to seek testing. In short, there is no widely effective means for ensuring that all individuals confirm that they have not been infected prior to engaging in activities that would entail contact with others. To prevent increasing the scope of the outbreak of COVID-19, it must be assumed that anyone could be infected and infect another person.

Vaccination will not be a viable option for preventing the spread of the virus at least through November of 2020, and likely for substantially longer. There is not yet any FDA-approved vaccine that could be used to

²¹ Johns Hopkins University, *Cases, Deaths, and Testing in All 50 States* (July 8, 2020), <https://coronavirus.jhu.edu/testing/states-comparison/testing-state-totals-by-pop>.

immunize the population to the virus. It is unlikely that an FDA-approved vaccine will be available for (optimistically) approximately 12 to 18 months. Indeed, vaccine development may take longer than that due to the number of steps in the process of development, trial and error, scaling to clinical trials, assessing side effects, and assessing efficacy across the population at large. *See Ercolano, A Coronavirus Vaccine is in the Works—But It Won't Emerge Overnight*, Johns Hopkins University (April 16, 2020).²² And even once any vaccine is confirmed to be effective, further time will be required to produce, distribute, and administer vaccines at scale. *Id.*

Similarly, the presence of widespread, or “herd,” immunity in the population is unlikely to prevent the spread of the virus at least through November, and likely for substantially longer. Herd immunity is present when a high percentage of the population has become immune to an infectious disease. Such herd immunity would dramatically slow the spread of the virus, as infected persons can become dead-ends for the virus, so to speak, because the people they interact with are immune to further transmission. A substantial majority of a population must be immune in order to achieve herd immunity, depending on the infectiousness of the agent. In this context, an individual’s immunity can come from either a vaccine or from previous infection. Due to the virus’s novelty, we do not know whether any immunity generated by previous

²² Available at <https://hub.jhu.edu/2020/04/16/coronavirus-vaccine-timeline>.

infection lasts permanently, for a specified period, or whether reinfection is possible. See CDC, *Frequently Asked Questions: Symptoms & Testing* (July 3, 2020).²³ In any event, achieving herd immunity through the spread of the virus through a large share of the population would entail a level of death several orders of magnitude greater than the approximately 125,000 Americans already lost to COVID-19. Aside from such a catastrophic level of spread—which, in any event, would be unlikely to occur by the August or November elections even if the virus were left unchecked—herd immunity is unlikely unless and until the development and widespread use of an effective vaccine.

As neither testing, vaccination, nor herd immunity will be viable mechanisms for preventing the spread of the virus in the near future, the only ways to limit its spread are behavioral interventions, such as self-isolation, social distancing, frequent handwashing, wearing masks, and disinfecting surfaces. Self-isolation involves not physically interacting with those outside one’s household. Social or physical distancing is maintaining at least six feet of distance between individuals. Both of these interventions are aimed at keeping infected individuals far enough apart from other individuals so that they do not pass the virus along. Frequent handwashing and regular disinfecting of surfaces can help curb the spread via contaminated surfaces.

²³ Available at <https://www.cdc.gov/coronavirus/2019-ncov/faq.html#Symptoms-&-Testing>.

While we cannot yet definitively determine the full effects of social distancing measures, social distancing has worked to slow the spread of respiratory viruses generally and this virus in particular. In Tennessee, the more aggressive social distancing measures put in place in late March and April were associated with reduced growth in new daily cases, only for new daily cases to increase dramatically in recent weeks after those measures were relaxed.²⁴ Around the country, there is evidence that cities and states that implemented stay-at-home orders experienced reduced transmission. *See, e.g.,* Matrajt & Leung, *Evaluating the Effectiveness of Social Distancing Interventions to Delay or Flatten the Epidemic Curve of Coronavirus Disease*, 26 *Emerging Infectious Diseases* (Aug. 2020);²⁵ Soumya et al., *Association of Stay-at-Home Orders With COVID-19 Hospitalizations in 4 States*, 323 *J. Am. Med. Ass’n* (May 27, 2020).²⁶

²⁴ *See* Tenn. Dep’t of Public Health, *Epi Curves, Case County by Region or County* (July 8, 2020), <https://www.tn.gov/health/cedep/ncov/data/epi-curves.html>; Tennessee Executive Order No. 22, An Order Directing Tennesseans to Stay Home Unless Engaging in Essential Activities to Limit Their Exposure to and Spread of COVID-19 (Mar. 30, 2020), <https://publications.tnsosfiles.com/pub/execorders/exec-orders-lee22.pdf>; Tennessee Executive Order No. 30, An Order Allowing Tennesseans to Return to Work Safely While Encouraging Continued Adherence to Health Guidelines to Limit the Spread of COVID-19 (Apr. 28, 2020), <https://publications.tnsosfiles.com/pub/execorders/exec-orders-lee30.pdf>.

²⁵ Available at https://wwwnc.cdc.gov/eid/article/26/8/20-1093_article.

²⁶ Available at <https://jamanetwork.com/journals/jama/fullarticle/2766673>.

* * *

The virus has presented, and continues to present, grave risks to the people of Tennessee. On June 1, appellants wrote that in the preceding month, the state had “begun to ease [social distancing] restrictions and Tennesseans ha[d] begun to resume many activities outside their homes,” but that “[t]his increased activity [] ha[d] not led to any notable increase [in] the rate of COVID-19’s spread.” Resp. in Opp. to Plfs.’s Mot. for Temp. Injunction, at 8 (June 1, 2020). This statement, tragically, has aged poorly. In the month preceding that statement, there were approximately 12,000 new confirmed cases of COVID-19 in the state of Tennessee.²⁷ In the month after that statement, there were approximately 20,000 new confirmed cases.²⁸ Given the virus’s contagiousness and severity—and given that it is unlikely that testing, vaccination, and herd immunity will prevent the spread, at least through November—it is essential that all individuals, no matter their testing status or membership in a high-risk group, take measures to prevent the spread of the virus, including by minimizing contact with individuals outside their household and avoiding spaces in which large numbers of people gather in proximity and touch the same surfaces.

²⁷ Tenn. Dep’t of Health, *Downloadable Datasets, Daily Case Information*, *supra* note 3.

²⁸ *Id.*

II. Polling Locations Present Unavoidable Increased Risks of Transmission of the Virus that Causes COVID-19.

The risk of transmission is particularly acute at polling locations, where large numbers of people congregate indoors and touch common surfaces that can carry the virus. Attempts to minimize these risks are unlikely to effectively prevent spread, given limitations in widespread testing and availability of personal protective equipment. In other states that have moved forward with in-person voting during the pandemic, poll workers have subsequently tested positive for COVID-19 and public health authorities and researchers have concluded that person-to-person transmission occurred at polling locations. Similar risks will be present in Tennessee's upcoming elections, and voters will be placed at great risk if not given the option of voting absentee.

A. Polling Locations Pose Inherent Virus Transmission Risks.

As discussed *supra* pp. 14-17, the virus can spread when individuals are in close proximity and may also spread when individuals touch common surfaces. Both conditions are likely to be present at polling locations.

Polling locations are often situated in crowded, indoor sites where voters are exposed to each other for extended periods of time.²⁹ Identification cards and ballots need to physically exchange hands. This makes them prime vectors for virus transmission. Voters, observers, greeters, and other poll workers must all congregate in places with low ventilation, which creates conditions for airborne transmission. These settings are not unlike those that researchers believe may have contributed to transmission among medical staff and major outbreaks in nursing facilities. See Prather, et al., *Reducing Transmission of SARS-CoV-2*, 368 Sci. (June 26, 2020).³⁰

The virus can also be transmitted through contaminated surfaces. As discussed *supra* p. 15, it is not yet fully understood the extent to which the virus spreads through surfaces, but surfaces touched by large groups of people in a short period of time are likely to present greater risks than surfaces touched less frequently. Polling locations contain many common surfaces that virtually all voters must touch multiple times within a short period of time, such as doors, poll books, pens, identification cards,

²⁹ The virus is significantly more likely to be transmitted among persons indoors than outdoors, with one study finding that the odds of transmission in closed environments is nearly 20 times greater than in an open-air environment. See Hiroshi Nishiura et al., *Closed Environments Facilitate Secondary Transmission of Coronavirus Diseases 2019 (COVID-19)* (Apr. 16, 2020), <https://www.medrxiv.org/content/10.1101/2020.02.28.20029272v2>.

³⁰ Available at <https://science.sciencemag.org/content/early/2020/05/27/science.abc6197>.

and voting machines. A voter carrying the virus—who, as discussed *supra* pp. 16-17, may not even know he or she is infected—may spread droplets to one of these surfaces. An otherwise healthy voter might touch the contaminated surface, pick up the virus, and inadvertently complete the transmission by touching their face with the contaminated hand.

The dangers posed by polling sites may be particularly pronounced in the coming elections. High turnout or a lengthy voting process can result in long wait times, furthering the risks posed by voters gathering in proximity and in indoor spaces. Turnout in the 2020 elections has, to date, been unusually high.³¹ Crowds and lines would further expose in-person voters to the risks of transmission inherent to polling locations.³²

³¹ Isenstadt, *Trump Drives Massive Turnout in Primaries Despite Token Opposition*, Politico (Feb. 16, 2020), <https://www.politico.com/news/2020/02/16/trump-campaign-voter-turnout-115338>; Lopez, *The Democratic Voter Surge Was Very Real on Super Tuesday*, Vox (Mar. 4, 2020), <https://www.vox.com/policy-and-politics/2020/3/4/21164518/super-tuesday-results-voter-turnout>.

³² While long lines and crowded locations are often associated with voting in urban counties, rural voters face risks of their own amidst this pandemic. As discussed *supra* p. 12, the virus has spread throughout Tennessee, with recent increases in rural counties. See Denis, *Rural Counties See a Spike in COVID-19 Cases*, WKRN (July 2, 2020), <https://www.wkrn.com/community/health/coronavirus/rural-counties-see-a-spike-in-covid-cases>. Voters in rural areas may have to travel longer, including by carpool and public transportation, to reach their polling location, and if infected are likely to have reduced access to hospitals with critical care facilities.

These risks pose particular dangers to poll workers, who must spend long hours inside, in proximity to voters and other poll workers. And poll workers tend to disproportionately fall in high-risk age ranges: in the 2018 general election, 58% of poll workers were over 61, and 27% were over 70.³³ Given these risks, there is a substantial risk that experienced poll workers will be unwilling to take the risk of working during the upcoming elections, resulting in fewer polling locations, understaffed polling locations, polling locations staffed by inexperienced workers, or some combination of the three—any of which would be likely to result in greater crowds and delays.³⁴ Giving all voters the option of voting absentee—and reducing crowds at polling locations—would significantly reduce risks both to voters and to these workers.

B. Mitigation Measures Could Not Fully Prevent COVID-19 Spread at Polling Locations.

The CDC has recognized these risks and issued guidance for reducing transmission risk. *See* CDC, *Considerations for Election Polling*

³³ *See* Bathel & Stocking, *Older People Account for Large Shares of Poll Workers and Voters in U.S. General Elections*, Pew Research Center (Apr. 6, 2020), <https://www.pewresearch.org/fact-tank/2020/04/06/older-people-account-for-large-shares-of-poll-workers-and-voters-in-u-s-general-elections>.

³⁴ Levine, *Elderly Poll Workers Run Elections. But COVID-19 Will Keep Legions Home*, NBC News (May 13, 2020), <https://www.nbcnews.com/politics/2020-election/elderly-poll-workers-run-u-s-elections-covid-19-will-n1205761>.

Locations and Voters (June 22, 2020).³⁵ And the Tennessee Division of Elections has issued similar guidance for county election administrators. See Tenn. Sec’y of State’s Office, Division of Elections, *Tennessee Election COVID-19 Contingency Plan* (Apr. 23, 2020).³⁶ But given the inherent transmission risks posed by polling locations, it is unlikely that mitigation measures, alone or in combination, would be completely effective in preventing spread at polling locations.

As an initial matter, it is not possible to prevent spread at polling locations by providing alternatives to in-person voting only for persons confirmed to be infected. Even if all symptomatic voters were to be tested, there would remain a high risk that an asymptomatic—but still contagious, *supra* pp. 16-17—voter would transmit the virus to others at the polls, either through close contact or by contaminating frequently touched surfaces. Moreover, given that the last day for requesting an absentee ballot by mail is seven days prior to any election,³⁷ it is impossible for a voter to know by that date whether he or she will receive a positive diagnosis in the week between that deadline and the election.

³⁵ Available at <https://www.cdc.gov/coronavirus/2019-ncov/community/election-polling-locations.html>.

³⁶ Available at <https://www.courthousenews.com/wp-content/uploads/2020/05/COVID-19-Plan.pdf>.

³⁷ Tenn. Sec’y of State’s Office, Division of Elections, *Absentee Voting*, <https://sos.tn.gov/products/elections/absentee-voting>.

The Division of Elections guidance provides that voters should be “encourage[d]” to wear masks.³⁸ Face masks can generally help reduce the risk of spread, but the efficiency of masks in preventing person-to-person transmission varies widely based on the material with which the masks are made. Medical-grade N95 masks, unavailable to the general population, can, if properly fitted and worn, prevent spread with a high degree of confidence. *See CDC, Strategies to Optimize the Supply of PPE and Equipment* (May 18, 2020).³⁹ But N95 masks are in short supply and should be reserved for healthcare workers, and even if more widely available would be difficult for the general public to have properly fit tested and tolerated at the required level of tightness. *Id.* By comparison, cotton masks can allow in more than half the number of droplets filtered by N95 masks. In any event, the Division of Elections guidance provides only that “[s]ignage will be designed to *encourage* all voters to wear masks” and that signs should be posted for voters to read providing “[d]irections to have their mask and gloves on when they enter the voting area *if they have them.*”⁴⁰ Voters, therefore, may show up at polling locations with varying levels of protection, or may refuse to wear

³⁸ *See Tennessee Election COVID-19 Contingency Plan, supra* note 36, at 5, 30.

³⁹ Available at <https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/index.html>.

⁴⁰ *See Tennessee Election COVID-19 Contingency Plan, supra* note 36, at 5, 30 (emphases added). Moreover, instructing voters to wear gloves may risk furthering spread, as gloves may cause voters to wash or disinfect their hands less frequently while still touching surfaces.

a mask at all. And given reports of Tennesseans who refuse to wear masks,⁴¹ voters wishing to avoid infection may be deterred from voting at all by the prospect of being in an enclosed space with individuals who will not comply after being “encourage[d]” to wear masks.

The Division of Elections guidance provides that election officials should take measures to maintain six feet of distance between persons.⁴² This is an important measure, but is still not a guarantee against transmission, especially where voters and poll workers are required to gather in an indoor space for extended periods of time. Should a voter or poll worker cough or sneeze, even six feet of distance may be insufficient, given the larger droplets expelled as part of a moist warm, cloud that allows infectious particles to travel farther than those droplets expelled when a person speaks or breathes.⁴³

⁴¹ Kruesi, *Governors Stress “Personal Responsibility” Over Virus Orders*, NBC Chicago (July 4, 2020), <https://www.nbcchicago.com/news/coronavirus/governors-stress-personal-responsibility-over-virus-orders/2299821> (“[Governor Lee] has vowed to stick to the personal responsibility mantra, with no plans to reinstate stay-at-home restrictions or impose statewide mandates—even as photos of unmasked people crowding bars and outdoor concerts across Tennessee spread across social media.”).

⁴² See *Tennessee Election COVID-19 Contingency Plan*, *supra* note 36, at 30.

⁴³ See Dhand & Li, *Coughs and Sneezes: Their Role in Transmission of Respiratory Viral Infections, Including SARS-CoV-2*, at 5, *Am. J. Resp. & Critical Care* (June 16, 2020), <https://www.atsjournals.org/doi/pdf/10.1164/rccm.202004-1263PP>.

Frequent cleaning of surfaces is an important mitigation measure, but cannot fully eliminate the risk of transmission via surfaces, especially in a highly trafficked area such as a polling location. Recognizing the risks posed by common surfaces, CDC and Division of Elections guidance for polling places emphasizes cleaning practices.⁴⁴ But the effectiveness of cleaning and disinfecting surfaces depends on frequency, and especially in a polling location with a large number of voters passing through, it is likely that surfaces may be touched by a large number of individuals between rounds of cleaning and disinfecting. The leading voting machine vendors have also issued guidance, related to cleaning their machines, that demonstrates the difficulties and potential unintended consequences of this mitigation measure in the voting context. *See* U.S. Election Assistance Commission, *Vendor and Manufacturer Guidance on Cleaning Voter Machines and Other Technology*.⁴⁵ Their guidance warns against inadvertently disturbing the machines' programming while wiping the surfaces, notes the need to power down machines before wiping them down, and advises that certain cleaning products might cause the machines to malfunction. *See id.* The difficulty of taking proper cleaning precautions is likely either to lead

⁴⁴ *See* CDC, *Considerations for Election Polling Locations*, *supra* note 35; *Tennessee Election COVID-19 Contingency Plan*, *supra* note 36.

⁴⁵ Available at <https://www.eac.gov/election-officials/vendor-and-manufacturer-guidance-cleaning-voting-machines-and-other-election>.

some poll workers to forgo proper cleaning or to exacerbate crowding and group exposure at polling sites resulting from malfunctioning machines.

Indeed, many of the mitigation practices called for in the CDC and Division of Elections guidance may pose operational challenges, especially for poll workers without experience in these measures who are called on to implement them for the first time amidst election day crowds and other demands. Even well-trained medical professionals have been found to have difficulty maintaining infection control best practices when faced with large crowds of patients. *See, e.g.,* Jeanes et al., *The Development of Hand Hygiene Compliance Imperatives in an Emergency Department*, 46 Am. J. Infection Control, 441-447 (April 2018).⁴⁶

To be clear, these and other mitigation measures are important and necessary steps, and may reduce the risk of transmission at polling locations. But they should be considered as *complementing*, rather than *substituting for*, providing voters the option of voting absentee. Indeed, the CDC guidance begins by urging election officials to pursue “any other feasible options for reducing the number of voters who congregate indoors in polling locations at the same time.” CDC, *Considerations for Election Polling Locations*, *supra* note 35. By way of analogy, seatbelts and air bags are important automobile safety measures, but they operate in tandem with speed limits and other traffic safety measures, not as alternatives.

⁴⁶ Available at <https://pubmed.ncbi.nlm.nih.gov/29269167>.

Given the transmission risks inherent to polling locations and the limitations of possible mitigation strategies, voters have a strong basis for isolating at home on election days to avoid contracting, or unknowingly spreading, the virus.

C. Recent Elections Illustrate the Risks of Transmission at Polling Places.

The experiences of poll workers and voters in states that have held elections in recent months present cautionary tales for in-person voting in Tennessee. The lack of adequate testing and contact tracing has prevented some of these states from definitively establishing the extent of virus transmission at polling locations, but the number of positive cases confirmed among poll workers and voters illustrates the risks that Tennesseans would have to take by entering a polling location.

In Wisconsin, which held an election on April 7, researchers have found that in-person voting rates are correlated with higher numbers of confirmed cases of COVID-19, and that absentee voting rates are correlated with fewer confirmed cases—effects that are statistically significant across a range of specifications accounting for factors including population density, income levels, and social distancing measures. *See Cotti et al., The Relationship Between In-Person Voting, and COVID-19: Evidence from the Wisconsin Primary* 10, Nat'l Bureau of Econ. Research (May 2020).⁴⁷ Specifically, a study of county-level in-person voting and county-level COVID-19 cases found that “a 10%

⁴⁷ Available at <https://www.nber.org/papers/w27187.pdf>.

difference in in-person voters per polling location between counties is associated with approximately a 17.7% increase in the positive test rate.” *Id.* at 10. This translates to approximately 700 additional COVID-19 cases related to in-person voting, or approximately 8% of all new cases in the weeks after the election. *Id.* at 14-15.⁴⁸

There have been numerous reports of poll workers testing positive for COVID-19 in the days before or after an election, indicating that such workers may have been infected at polling locations or spread the virus to others at those locations. In Pennsylvania, a Philadelphia poll watcher tested positive for COVID-19 ten days after working at a polling location during a June 2 election; the poll watcher reported that over the course of the day, lines grew longer, protective supplies such as hand sanitizer ran low, and social distancing practices became inconsistent.⁴⁹ In Georgia, an election worker tested positive for COVID-19 48 hours before the June 9 election, but local election officials did not inform the public

⁴⁸ Amicus curiae Honest Elections Project writes that the Chancery Court “thought that in-person voting made more Wisconsinites catch COVID-19,” but dismisses that preliminary finding and opines that “[c]ourts should leave these questions to the experts.” Amicus Brief of Honest Elections Project, at 13. But the Chancery Court *credited* the experts, relying on the declaration of Dr. Arthur Reingold regarding the rigorous county-level study discussed above, and on the findings of Wisconsin public health officials. *See* Mem. & Order at 22.

⁴⁹ Previti, *A Philly Poll Watcher Got Coronavirus, but the City Isn't Notifying Voters*, Penn Live (June 24, 2020), <https://www.pennlive.com/news/2020/06/a-philly-poll-watcher-got-coronavirus-but-the-city-isnt-notifying-voters.html>.

or other poll workers, reasoning that “due to the continuing health crisis, everyone knows the risk that they take when they go out in public ... and they are making that choice.”⁵⁰ In Florida, after a March 17 election two poll workers tested positive for COVID-19, one of whom had election day responsibilities that entailed handling the ID cards of some of the 61 people who voted at that location.⁵¹ In Illinois, a Chicago poll worker stationed at a voting site during the March 17 primary died from the coronavirus just two weeks—the incubation period for the coronavirus—after the election. The Chicago Board of Elections subsequently sent a letter to all poll workers and voters who visited the location, which read: “Although the Board took every precaution possible by supplying poll workers with hand sanitizers, gloves and instructions for wiping down the equipment, the fact remains that you and an individual who has now

⁵⁰ Beall & Moritz, *COVID Endangers the Volunteers Who Make Your Vote Count*, USA Today (June 18, 2020), <https://www.usatoday.com/story/news/investigations/2020/06/18/coronavirus-election-workers-often-higher-age-risk/3206270001>.

⁵¹ See Man, *Two Broward Poll Workers, Including One Who Handled Voters’ Driver Licenses, Test Positive for Coronavirus*, South Fla. Sun Sentinel (Mar. 26, 2020), <https://www.sun-sentinel.com/coronavirus/fl-ne-broward-elections-poll-workers-coronavirus-20200326-wmgy775dvjc5jis2oagxlpmlule-story.html>.

tested positive voted at the same Polling Place[.]”⁵² Similar letters were sent to residents who visited three other polling locations in Chicago.⁵³

D. These Risks Will Be Present for the Tennessee Elections at Issue in this Litigation.

The risks discussed above will be present through at least the August primary election and the November general election at issue in this litigation. Given the current number of active cases in Tennessee and across the United States, reliable prevention can only be expected once a proper vaccine has been tested, produced, distributed, and administered at scale, which will likely take at least another 12 to 18 months. *Supra* p. 22. Likewise, because herd immunity will not develop until a vaccine has been created or a substantial portion of the population has been infected and rendered immune, COVID-19 will likely continue to be a threat through the general election. Some have speculated that virus transmission and prevalence may wane over the summer months, but there is no evidence that this virus will exhibit such a tendency, and in the final weeks of spring and early weeks of summer the spread of the

⁵² Brown & Sfondeles, *South Side Man Died of COVID-19 Two Weeks After Serving as Election Judge: ‘Life is Too Short’*, Chi. Sun Times (Apr. 13, 2020), <https://chicago.suntimes.com/politics/2020/4/13/21219934/illinois-election-day-judge-poll-worker-death-covid-19-primary-coronavirus-burke-pritzker>.

⁵³ *Id.*

virus has actually accelerated in Tennessee.⁵⁴ In any event, even if there proves to be some decline in the warmer months, there would likely be a resurgence in the fall, amidst the November general election, just as hospital capacity is likely to be further taxed by the beginning of the annual influenza season. See Lipsitch, *Seasonality of SARS-CoV-2: Will COVID-19 Go Away on Its Own in Warmer Weather?*, Center for Communicable Disease Dynamics, Harv. T.H. Chan Sch, Pub. Health,⁵⁵ Kissler et al., *Projecting the Transmission Dynamics of SARS-CoV-2 Through the Postpandemic Period*, 368 Sci. 860, 860-868 (May 22, 2020).⁵⁶

Accordingly, giving voters the option of voting absentee would make the upcoming elections significantly safer, both for the voters who choose to vote absentee and for the poll workers and in-person voters whose polling locations will be less crowded as a result of absentee voting.

CONCLUSION

COVID-19 and the virus that causes it pose unique risks that are particularly acute at polling locations. In light of these risks, voters have strong reasons to self-isolate and avoid the risks of spreading or catching the virus by voting in person. Allowing voting by absentee ballot would

⁵⁴ Tenn. Dep't of Health, *Epidemiology and Surveillance Data*, *supra* note 2.

⁵⁵ Available at <https://ccdd.hsph.harvard.edu/will-covid-19-go-away-on-its-own-in-warmer-weather>.

⁵⁶ Available at <https://science.sciencemag.org/content/368/6493/860>.

be a much safer option for public health than forcing voters to either forego their right to vote or to risk their—and the public’s—health by voting in person.

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Respectfully submitted,

/s/ Stephen J. Zralek
Stephen J. Zralek, BPR# 018971
BONE MCALLESTER
NORTON PLLC
Nashville City Center
511 Union Street, Ste. 1600
Nashville, TN 37219
Telephone: (615) 238-6300
szralek@bonelaw.com

/s/ Debo P. Adebile
Debo P. Adebile, *Pro Hac Vice*
pending
WILMER CUTLER PICKERING
HALE AND DORR LLP
7 World Trade Center
250 Greenwich Street
New York, NY 10007
(212) 230-8800
debo.adebile@wilmerhale.com

Attorneys for Amici Curiae

CERTIFICATE OF COMPLIANCE

I hereby certify that this amicus brief complies with Rule 3.02, Section 3, of Rule 46 of the Tennessee Supreme Court. This brief contains 7,106 words.

/s/ Stephen J. Zralek

CERTIFICATE OF SERVICE

I hereby certify that on July 9, 2020, I electronically filed the foregoing brief with the Clerk of the Court using the Court's electronic filing system, which will send a notice of electronic filing to all counsel of record.

/s/ Stephen J. Zralek

APPENDIX A

AMICI CURIAE⁵⁷

David M. Aronoff, M.D., is Professor of Medicine and holds the Addison B. Scoville, Jr. Chair in Medicine, at Vanderbilt University Medical Center. He is Director of the Division of Infectious Diseases in the Department of Medicine at Vanderbilt University Medical Center. He is a recognized leader in the field of infectious diseases, as indicated by his election as a Fellow in the Infectious Diseases Society of America and the American Academy of Microbiology. He has published more than 200 peer-reviewed manuscripts in the field of infectious diseases. Dr. Aronoff has been leading the Division of Infectious Diseases response to COVID-19. He has been involved in the daily care of hospitalized patients with COVID-19, has assisted with and lead studies of COVID-19, has been involved in advising businesses on employee and customer safety during the pandemic, and has been a frequent public communicator about COVID-19. Dr. Aronoff's opinions here are his own and not intended to reflect those of his employer.

Nina Fefferman, Ph.D., is the Director of the Mathematical Modeling Consulting Center, and the Associate Director of the One Health Initiative at the University of Tennessee, Knoxville, where she is also a Professor in both the Department of Ecology & Evolutionary Biology and the Department of Mathematics. Her research uses mathematical modeling to explore the behavior, evolution, and control of complex systems, focusing primarily on infectious disease epidemiology and pandemic preparedness. Fefferman has been an active member of the National Institute for Mathematical and Biological Synthesis (NIMBioS), and the Command, Control, and Interoperability Center for Advanced Data Analysis (CCICADA), a Department of Homeland Security Center of Excellence. She has served on scientific advisory panels/boards for the EPA, Mathematical Biosciences Institute (MBI), and Los Alamos National Laboratories and regularly consults to both governmental agencies and private companies. Her work has been funded by NSF,

⁵⁷ All amici curiae join this brief in their individual capacity, and not on behalf of any institutions with which they are affiliated. Institutions are included only for purposes of background and identification.

NIH, DHS, DoD, USFWS, and USDA, including targeted funds to study pandemic mitigation for Ebola in 2014, Zika virus in 2016, and now COVID-19 in 2020.

James E.K. Hildreth, Sr., Ph.D., M.D., 12th President and CEO of Meharry Medical College is leading the technological, academic and clinical transformation of the nation's largest, private, historically Black academic health sciences center. Focusing on the future of an organization with challenges represented by constant changes in higher education and in healthcare, he has positioned the organization for success through innovative programs, strategic partnerships and creating an entrepreneurial culture. Dr. Hildreth has transformed institutions and lives through a unique combination of skills, expertise and passionate drive. He seeks to achieve organizational success by nurturing passion and developing confidence in others. James' enthusiasm and love for the work he does inspire others and draws them into bold visions and new directions. Because of his standing as a world class infectious disease expert, excellent ability to explain complex science to laypersons and engaging communication style, James has emerged as a respected national figure in the response to the COVID19 pandemic. Previously, Dr. Hildreth served as Dean of the College of Biological Sciences at University of California, Davis. In this role he oversaw the education of thousands of undergraduates, the majority of whom had aspirations for healthcare careers. He totally revamped the college's student advising system and created novel student learning communities. These visionary changes were adapted by the entire UC Davis campus, which consists of six undergraduate colleges. James also created a unique research program called "Kingdom Crossing" involving collaborations between scientists who focused on organisms from distinct kingdoms of life (plants, animals). This program resulted in novel discoveries including a plant hormone with significant potential as an antimalarial drug. Dr. Hildreth holds an MD from Johns Hopkins School of Medicine, PhD from Oxford University and BA from Harvard University. He is a Rhodes Scholar who has been elected to the National Academy of Medicine. James has received numerous awards and recognition, including honorary degrees, for his scientific accomplishments, leadership, service to disadvantaged communities and mentorship of students and junior colleagues. He has served on

numerous national scientific councils including current membership on the Advisory Council to the NIH director. James currently serves as Chair of the Board of Trustees of the St Jude's Research Hospital Graduate School of Biomedical Sciences. He also serves on other boards including Nashville Healthcare Council, Nashville Health, Boy Scouts of America and General Board of Higher Education, and United Methodist Church.

William Schaffner, M.D., is a Professor of Preventive Medicine in the Department of Health Policy and a Professor of Medicine in the Division of Infectious Diseases at the Vanderbilt University School of Medicine. He is the past Chairman of the Department of Preventive Medicine. Dr. Schaffner has consulted with the Tennessee Department of Health and the Centers for Disease Control and Prevention (CDC) for many years in the area of communicable disease control and vaccine policy. He is past-President and currently is the Medical Director of the National Foundation for Infectious Diseases and is a past member of the Executive Committee of the Infectious Diseases Society of America. He is a member of the COVID Vaccines Work Group of the CDC's Advisory Committee on Immunization Practices (ACIP) and is a member of the COVID-19 Advisory Panel of the National Collegiate Athletic Association (NCAA) and has consulted with Nashville's Board of Health on COVID policy.

Thomas Talbot, M.D., M.P.H., is a Professor of Medicine at Vanderbilt University School of Medicine and also serves as the Chief Hospital Epidemiologist for Vanderbilt University Medical Center (VUMC) in Nashville, TN. Dr. Talbot is a recognized expert in the field of healthcare epidemiology and infection control and has more than 85 publications in peer-reviewed journals focused on topics including respiratory virus transmission and prevention. He has served as a member of the Centers for Disease Control and Prevention's Healthcare Infection Control Practices Advisory Committee (HICPAC) and on the Board of Directors for the Society for Healthcare Epidemiology of America (SHEA). He also currently co-chairs the state of Tennessee's multidisciplinary advisory group that oversees efforts focused on healthcare-associated infection prevention and reporting in the state. As a part of his role as the Chief Hospital Epidemiologist, he oversees infection prevention activities at VUMC. In this role, he has helped lead the institutional response and

planning for the COVID pandemic. He also has served on Governor Bill Lee's COVID Task Force for the state of Tennessee.

Edwin Trevathan, M.D., M.P.H., the Amos Christie Chair in Global Health, is the Director of the Vanderbilt Institute for Global Health, and professor of Neurology and Pediatrics at Vanderbilt University School of Medicine. Trevathan has served in several leadership positions, including Professor (Neuroscience), Executive Vice President and Provost at Baylor University, Professor (Epidemiology, Neurology & Pediatrics) and founding Dean of the College for Public Health and Social Justice at Saint Louis University (SLU), a national center director at the U.S. Centers for Disease Control and Prevention (CDC), and Professor and Director of the Division of Pediatric Neurology at Washington University in St. Louis and Neurologist-in-Chief at St. Louis Children's Hospital. As an expert in global health, Dr. Trevathan has conducted large epidemiology studies in Wuhan, China, in sub-Saharan Africa, and in other areas of the world. While a member of the senior leadership team at CDC, Dr. Trevathan was the Strategic Lead for the pediatric response to the 2009 H1N1 flu pandemic. Dr. Trevathan has published research on asymptomatic COVID-19 in Wuhan, China. He has served on committees at the World Health Organization (WHO), the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), and the Tennessee Department of Health.

C. William Wester, M.D., M.P.H., is a Professor of Medicine in the Department of Medicine, Division of Infectious Diseases at the Vanderbilt University School of Medicine, and the Associate Director for Faculty Development in Global Health. Dr. Wester earned his MD degree from the Geisel School of Medicine at Dartmouth and his MPH degree from the Harvard T.H. Chan School of Public Health. The goal of his research includes long-term HIV complications with a focus on HIV-associated kidney disease and implementation science in resource-constrained settings of the world. As an expert in global health, Dr. Wester has been integrally involved in the scale-up of comprehensive HIV services within sub-Saharan Africa for the past 20+ years. He lived and worked in Botswana (2000-2008) for the Harvard School of Public Health (Botswana-Harvard School of Public Health AIDS Initiative) and was integral to the establishment of its national public antiretroviral treatment program. Since returning to the U.S. in 2008, he has remained

actively involved in HIV scale-up, now leading/directing large programs in (i) Mozambique, where he serves as Project Director for a large CDC/PEPFAR-funded program and (ii) Nigeria, where he and his team are conducting an NIH (NIDDK-funded) clinical trial evaluating the optimal means to reduce the risk for long-term kidney complications among HIV-positive adults. In addition to HIV/AIDS, his work also focuses on Tuberculosis, Malaria, and most recently COVID-19 where he provides technical expertise to develop standard operating procedures and conduct research evaluations to inform clinical care guidelines. Dr. Wester is a member of the PLOS ONE editorial board, he has served on numerous NIH study sections, and his research is funded by the NIH, CDC/PEPFAR, and USAID.