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Drake Snell; Jesse Widerholt; Jennifer Pine; Michelle Johnson; Angela Zorn; Arielle Brandenburg; Nourish Family Wellness, P.L.L.C.; Dr. Elizabeth Berg; Lisa Hanson; Jayne Huber; Christine Luetgers; Thomas O'Keefe; John Bruski; Northland Baptist Church of St. Paul, Minnesota; Aaron Kessler; and Diane Smith,

Petitioners,

vs.

Tim Walz, Governor of Minnesota, in his official capacity and Attorney General Keith Ellison, in his official capacity,

Respondents

**BRIEF OF MINNESOTA PUBLIC
HEALTH ASSOCIATION AS
AMICUS CURIAE IN SUPPORT OF
RESPONDENTS**

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The appendix to this brief is not available for online viewing as specified in the *Minnesota Rules of Public Access to the Records of the Judicial Branch*, Rule 8, Subd. 2(h)(3).

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INTRODUCTION AND INTEREST

The Minnesota Public Health Association respectfully submits this brief as *amicus curiae* in support of Respondents.¹ MPHA is a not-for-profit, membership supported organization dedicated to creating a healthier Minnesota through effective public health practice and engaged citizens. MPHA represents over 400 public health professionals across the state of Minnesota who champion the health of Minnesota's people and communities. MPHA's members include doctors, nurses, and retired health commissioners. MPHA believes scientific research and data demonstrate that public mask-wearing is a critical tool to reduce the spread of COVID-19.

COVID-19 presented the most significant public health emergency in a century, with millions of lives lost around the world since the discovery of the virus in late 2019. Public health professionals raced to learn as much as possible about SARS-CoV-2, the virus that causes COVID-19, including how to slow its spread. Because of the scale of this emergency and the evolving scientific understanding of the virus, the State of Minnesota was required to make difficult decisions about how best to protect Minnesotans. To do so, the government

¹ MPHA certifies per Minnesota Rule of Civil Appellate Procedure 129.03 that (1) no counsel for a party wrote the brief in whole or in part; and (2) no person or entity has made a monetary contribution to the preparation or submission of the brief other than MPHA, its members, and its counsel.

needed to strike a balance between science-based public health recommendations and the civil liberties of Minnesotans.

As a non-profit focused on public health, MPHA is particularly well-positioned to explain how the science clearly shows that public mask-wearing slowed the spread of COVID-19 and that Governor Walz's mask mandate protected public health in Minnesota.

ARGUMENT

I. Historic use of masks and scientific research regarding masking did not focus on protecting others from the risk posed by the mask wearer.

Historically, Americans have not engaged in widespread public masking as a public health measure to limit the spread of respiratory viral infections.² Although workers sometimes wore masks for their own respiratory protection when engaged in tasks such as grinding materials like crystalline silica, heat removal of lead paint, and other industrial processes, members of the general population typically have not worn masks as an infection control tool.³

The focus of scientific research on masking in the United States matched this usage. Research historically revolved around the use of masks to protect

² CDC/NIOSH, *100 Years of Respiratory Protection History*, <https://www.cdc.gov/niosh/npptl/Respiratory-Protection-history.html> (last visited June 29, 2021).

³ *Id.*

workers from contaminants in the workplace rather than as a means of source control.^{4, 5, 6} While the 1918 flu pandemic demonstrated a need for respiratory protection to slow the spread of the disease, researchers at the time were still largely focused on masks as a tool to protect the wearer rather than masks as a source control tool.⁷ As a source control tool, the mask's primary function is not

⁴ *Id.*

⁵ Rohan Fernando et al., *Advancements in Elastomeric Respirator Technology for Use as Source Control*, CDC, NIOSH Science Blog (March 1, 2021), https://blogs.cdc.gov/niosh-science-blog/2021/03/01/elastomeric_source-control/.

⁶ Philip W. Clapp et al., *Evaluation of Cloth Masks and Modified Procedure Masks as Personal Protective Equipment for the Public During the COVID-19 Pandemic*, JAMA Intern Med. (Dec. 10, 2020), <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2774266>.

⁷ CDC/NIOSH, *100 Years of Respiratory Protection History*, <https://www.cdc.gov/niosh/npptl/Respiratory-Protection-history.html> (last visited June 29, 2021).

to protect the mask wearer from infection, but to protect others from being infected by the mask wearer.^{8, 9, 10}

II. Early conflicting and changing guidance on masking contributed to anti-mask sentiments.

Throughout the pandemic, the most urgent public health goal has been to prevent individuals infected with COVID-19 from infecting others. But early in the pandemic, the then-existing scientific literature did not analyze how masks protect others from being infected by the wearer. Because there was a mismatch

⁸ Seyed M. Moghadas et al., *The Implications of Silent Transmission for the Control of COVID-19 Outbreaks*, Proceedings of the Nat'l Acad. of Sci. of the United States of America, U.S. Nat'l Library of Med., Nat'l Inst. of Health (Jul. 6, 2020), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7395516/>.

⁹ Rohan Fernando et al., *Advancements in Elastomeric Respirator Technology for Use as Source Control*, CDC, NIOSH Science Blog (March 1, 2021), https://blogs.cdc.gov/niosh-science-blog/2021/03/01/elastomeric_source-control/.

¹⁰ William G. Lindsley et al., *A Comparison of Performance Metrics for Cloth Face Masks as Source Control Devices for Simulated Cough and Exhalation Aerosols*, U.S. Nat'l Library of Med., Nat'l Inst. of Health (Feb. 19, 2021) (preprint), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7899465/>.

between the existing scientific literature and public health goals, the public initially received confusing messages about the efficacy of mask-wearing.^{11, 12}

For instance, when former United States Surgeon General Jerome Adams stated in February 2020 that masks worn by non-health professionals can increase the spread of the virus, he did not have the data specific to the efficacy of masking as a means of source control.¹³ Similarly, early in the pandemic the World Health Organization (“WHO”) warned that mask wearing could provide the wearer a false sense of security that they were protected when they were not.¹⁴ But in June 2020, the WHO changed its guidance “in light of evolving evidence,” and advised people to wear masks in public.¹⁵

¹¹ David Scales et al., *The Covid-19 Infodemic - Applying the Epidemiologic Model to Counter Misinformation*, N. Eng. Journal Med. (May 12, 2021) (preprint) https://www.nejm.org/doi/10.1056/NEJMp2103798?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed.

¹² Hillary Leung, *Why Wearing a Face Mask Is Encouraged in Asia, but Shunned in the U.S.*, Time Magazine (Mar. 12, 2020), <https://time.com/5799964/coronavirus-face-mask-asia-us/>.

¹³ Fadel Allassan, *Surgeon General Defends Reversal on Face Mask Policy*, Axios (Jul. 12, 2020), <https://www.axios.com/surgeon-general-reversal-face-mask-d385e2d5-42b7-433e-89a6-3584f3e61bf3.html>.

¹⁴ Amy Barrett, *Coronavirus: Wearing a Face Mask Does not Give ‘False Sense of Security’, Say Experts*, BBC Science Focus Magazine (July 27, 2020), <https://www.sciencefocus.com/news/coronavirus-wearing-a-face-mask-does-not-give-false-sense-of-security-say-experts/>.

¹⁵ *Id.*

Because SARS-CoV-2 was a new virus, medical experts were making the best recommendations they could to slow the spread of the disease with the limited information available at the time. That information was primarily based on experience in European countries such as Italy and historical spread of disease in populations that was not specific to SARS-CoV-2. Past experiences with infectious diseases such as tuberculosis, influenza, HIV, MERS and Ebola informed early public health recommendations regarding COVID-19 and masking.¹⁶

As the pandemic progressed, scientists collected additional information specific to the SARS-CoV-2 virus, and with the benefit of additional knowledge, medical experts made updated and more informed recommendations about how to slow the spread of the virus.^{17, 18} These changing recommendations in the first

¹⁶ See CDC/NIOSH, *100 Years of Respiratory Protection History*, <https://www.cdc.gov/niosh/npptl/Respiratory-Protection-history.html> (last visited June 29, 2021).

¹⁷ See Fadel Allasan, *Surgeon General Defends Reversal on Face Mask Policy*, *Axios* (Jul. 12, 2020), <https://www.axios.com/surgeon-general-reversal-face-mask-d385e2d5-42b7-433e-89a6-3584f3e61bf3.html>.

¹⁸ See Amy Barrett, *Coronavirus: Wearing a Face Mask Does not Give 'False Sense of Security'*, *Say Experts*, *BBC Science Focus Magazine* (July 27, 2020), <https://www.sciencefocus.com/news/coronavirus-wearing-a-face-mask-does-not-give-false-sense-of-security-say-experts/>.

months of the pandemic, in addition to misinformation and the politicization of masking, increased confusion on the efficacy of mask wearing.^{19, 20}

III. Public masking slows the spread of COVID-19.

The principal mode by which people are infected with SARS-CoV-2, the virus that causes COVID-19, is through exposure to respiratory fluids carrying the infectious virus. The three main pathways for exposure to SARS-CoV-2 are through (1) inhalation of air carrying fine droplets and aerosol particles that contain infectious virus, (2) accumulation of virus carried in exhaled droplets and particles on exposed mucous membranes, and (3) touching mucous membranes with hands soiled by exhaled respiratory fluids containing the virus.²¹

¹⁹ David Scales et al., *The Covid-19 Infodemic - Applying the Epidemiologic Model to Counter Misinformation*, N. Eng. Journal Med. (May 12, 2021) (preprint) https://www.nejm.org/doi/10.1056/NEJMp2103798?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed.

²⁰ Hillary Leung, *Why Wearing a Face Mask Is Encouraged in Asia, but Shunned in the U.S.*, Time Magazine (Mar. 12, 2020), <https://time.com/5799964/coronavirus-face-mask-asia-us/>.

²¹ Atsushi Mizukoshi et al, *Assessing the Risk of COVID-19 from Multiple Pathways of Exposure to SARS-CoV-2: Modeling in Health-Care Settings and Effectiveness of Nonpharmaceutical Interventions*, 147 Environment International 106338 (Feb. 2021), <https://doi.org/10.1016/j.envint.2020.106338>.

Crucially, as the pandemic progressed, scientists discovered that over half of SARS-CoV-2 infections are spread by people who do not have symptoms.^{22, 23} This happens in two ways – an infected individual can spread the virus to others before symptoms occur (pre-symptomatic)²⁴ or an infected individual who never develops symptoms (asymptomatic) can unknowingly spread the virus to others.²⁵

This discovery provided additional evidence that mask-wearing as a means of source control is an important piece of a multi-layered approach to

²² Seyed M. Moghadas et al., *The Implications of Silent Transmission for the Control of COVID-19 Outbreaks*, Proceedings of the Nat'l Acad. of Sci. of the United States of America, U.S. Nat'l Library of Med., Nat'l Inst. of Health (Jul. 6, 2020), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7395516/>.

²³ Peng Wu et al., *Assessing Asymptomatic, Pre-symptomatic and Symptomatic Transmission Risk of SARS-CoV-2*, Clinical Infectious Diseases, U.S. Nat'l Library of Med., Nat'l Inst. of Health (Mar. 27, 2021), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8083716/>; see also CDC, *COVID-19 Frequently Asked Questions*, <https://www.cdc.gov/coronavirus/2019-ncov/faq.html#If-You-or-Someone-You-Know-is-Sick-or-Had-Contact-with-Someone-who-Has-COVID-19> (last visited June 29, 2021).

²⁴ Jennifer K. Bender et al., *Analysis of Asymptomatic and Presymptomatic Transmission in SARS-CoV-2 Outbreak, Germany, 2020*, 27 Emerging Infectious Diseases 4 (Apr. 2021), <https://doi.org/10.3201/eid2704.204576>.

²⁵ U.S. Dep't of Health & Human Servs., Nat'l Inst. of Health, *NIH Study Suggests COVID-19 Prevalence Far Exceeded Early Pandemic Cases*, Nat'l Inst. of Health (June 22, 2021), <https://www.nih.gov/news-events/newsroom/nih-study-suggests-covid-19-prevalence-far-exceeded-early-pandemic-cases>.

controlling the spread of COVID-19. In particular, because of the time-lag between the date of infection and the onset of symptoms, masking by pre-symptomatic and asymptomatic individuals is a critical source control tool.^{26, 27} The average time between infection and hospitalization is 13.5 days, with 95% probability coverage ranging from 4.8 to 27.9 days.²⁸ Research suggests that people who are infected with SARS-CoV-2 are at their most contagious in the 24 to 48 hours before they experience symptoms.²⁹ Public masking decreases the potential that an infected individual unwittingly spreads the virus before realizing they are infected.³⁰

²⁶ Nat'l Ctr. for Immunization and Respiratory Diseases, Division of Viral Diseases, *Science Brief: Community Use of Cloth Masks to Control the Spread of SARS-CoV-2*, U.S. Nat'l Library of Med., Nat'l Inst. of Health (May 7, 2021), <https://www.ncbi.nlm.nih.gov/books/NBK570440/>.

²⁷ Michael A. Johansson et al., *SARS-CoV-2 Transmission From People Without COVID-19 Symptoms*, JAMA Network Open, U.S. Nat'l Library of Med., Nat'l Inst. of Health (Jan. 4, 2021), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7791354/>.

²⁸ Edward H. Kaplan et al., *Aligning SARS-CoV-2 Indicators via an Epidemic Model: Application to Hospital Admissions and RNA Detection in Sewage Sludge*, Health Care Mgmt. Sci., U.S. Nat'l Library of Med., Nat'l Inst. of Health (Oct. 28, 2020), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7592141/>.

²⁹ Kim Schive, *I've Been Exposed to COVID-19; How Soon Will I be Contagious?*, MIT Medical (Oct. 2, 2020), <https://medical.mit.edu/covid-19-updates/2020/10/exposed-to-covid-19-how-soon-contagious>.

³⁰ Nat'l Ctr. for Immunization and Respiratory Diseases, Division of Viral Diseases, *Science Brief: Community Use of Cloth Masks to Control the Spread of SARS-*

IV. Because public masking slows the spread of COVID-19, it has a significant positive impact on public health outcomes.

By April 2020, infectious disease experts began to understand that public masking is a powerful tool to slow the spread of COVID-19.³¹ As scientists have learned more about COVID-19, consensus is developing around the “Swiss cheese model of risk and safety” a concept adapted by Bill Hanage, an epidemiologist at the Harvard T.H. Chan School of Public Health, to help explain the need for a multi-layered approach to reducing risk.³² The Centers for Disease Control and Prevention (“CDC”) recommends this layering of risk reduction

CoV-2, U.S. Nat’l Library of Med., Nat’l Inst. of Health (May 7, 2021), <https://www.ncbi.nlm.nih.gov/books/NBK570440/>.

³¹ Monica Gandhi & Diane Havlir, *The Time for Universal Masking of the Public for Coronavirus Disease 2019 is Now*, Open Forum Infectious Diseases, Perspectives, Infectious Diseases Society of America (Apr. 13, 2020), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7179801/pdf/ofaa131.pdf>.

³² Siobhan Roberts, *The Swiss Cheese Model of Pandemic Defense*, N.Y. Times, Dec. 5, 2020 (updated Dec. 7, 2020), <https://www.nytimes.com/2020/12/05/health/coronavirus-swiss-cheese-infection-mackay.html>.

actions to reduce the spread of COVID-19. Masking is a key part of this layered approach to reduce the spread of COVID-19.^{33, 34, 35}

The positive impact of masking on public health was demonstrated early in the COVID-19 pandemic in a study of two salon workers in Missouri. These salon workers worked while both were positive for SARS-CoV-2 but were wearing cloth masks as required under the salon's universal masking policy.³⁶ Among 139 clients exposed to the two symptomatic hair stylists while both the stylists and customers wore face masks, no symptomatic secondary cases were

³³ Nat'l Ctr. for Immunization and Respiratory Diseases, Division of Viral Diseases, *Science Brief: Community Use of Cloth Masks to Control the Spread of SARS-CoV-2*, U.S. Nat'l Library of Med., Nat'l Inst. of Health (May 7, 2021), <https://www.ncbi.nlm.nih.gov/books/NBK570440/>.

³⁴ Heesoo Joo et al., *Decline in COVID-19 Hospitalization Growth Rates Associated with Statewide Mask Mandates - 10 States, March-October 2020*, CDC, Morbidity and Mortality Weekly Report, U.S. Nat'l Library of Med., Nat'l Inst. of Health (Feb. 12, 2021), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7877582/> (attached as Addendum Add. 004-008).

³⁵ Alexander Doroshenko, *The Combined Effect of Vaccination and Nonpharmaceutical Public Health Interventions-Ending the COVID-19 Pandemic*, JAMA Network Open (June 1, 2021), <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2780541>.

³⁶ M. Joshua Hendrix et al., *Absence of Apparent Transmission of SARS-CoV-2 from Two Stylists After Exposure at a Hair Salon with a Universal Face Covering Policy – Springfield, Missouri, May 2020*, CDC, Morbidity and Mortality Weekly Report (Jul. 14, 2020), <http://dx.doi.org/10.15585/mmwr.mm6928e2> (attached as Addendum Add. 001-003).

reported.³⁷ Among 67 customers tested for SARS-CoV-2, all tested negative for the virus. The authors suggested that broader implementation of masking policies could mitigate the spread of infection in the general population.³⁸ Additional examples of the real-world effectiveness of community masking can be found in the CDC's Scientific Brief, *Community Use of Cloth Masks to Control the Spread of SARS-CoV-2*³⁹ and a recent study in Georgia elementary schools.⁴⁰

As explained above, masking is particularly important to slow the spread of COVID-19 by pre-symptomatic and asymptomatic infected individuals, who the CDC has estimated transmit more than half of all COVID-19 infections.⁴¹

³⁷ *Id.*

³⁸ *Id.*

³⁹ Nat'l Ctr. for Immunization and Respiratory Diseases, Division of Viral Diseases, *Science Brief: Community Use of Cloth Masks to Control the Spread of SARS-CoV-2*, U.S. Nat'l Library of Med., Nat'l Inst. of Health (May 7, 2021), <https://www.ncbi.nlm.nih.gov/books/NBK570440/>.

⁴⁰ Jenna Gettings et al., *Mask Use and Ventilation Improvements to Reduce COVID-19 Incidence in Elementary Schools - Georgia, November 16-December 11, 2020*, CDC, *Morbidity and Mortality Weekly Report* (May 28, 2021), <https://www.cdc.gov/mmwr/volumes/70/wr/mm7021e1.htm>

⁴¹ Michael A. Johansson et al., *SARS-CoV-2 Transmission From People Without COVID-19 Symptoms*, *JAMA Network Open*, U.S. Nat'l Library of Med., Nat'l Inst. of Health (Jan. 4, 2021), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7791354/>.

Data also shows that people are most infectious two days before the onset of symptoms.⁴² As a result, universal masking is an important and necessary part of a multi-layered risk reduction plan.⁴³

V. State-wide mask mandates protect public health.

Three studies examining the effects of government mask mandates further demonstrate that masking helps slow the spread of COVID-19. These studies indicate that when governments issued mask mandates, the mandates limited community spread of COVID-19.

The first study, conducted between March and October 2020, found states with statewide mask mandates reported “a decline in weekly COVID-19-associated hospitalization growth rates by up to 5.5 percentage points for adults aged 18-64 years after mandate implementation, compared with growth rates during the 4 weeks preceding implementation of the mandate.”⁴⁴

⁴² Kim Schive, *I've Been Exposed to COVID-19; How Soon Will I be Contagious?*, MIT Medical (Oct. 2, 2020), <https://medical.mit.edu/covid-19-updates/2020/10/exposed-to-covid-19-how-soon-contagious>.

⁴³ Nat'l Ctr. for Immunization and Respiratory Diseases, Division of Viral Diseases, *Science Brief: Community Use of Cloth Masks to Control the Spread of SARS-CoV-2*, U.S. Nat'l Library of Med., Nat'l Inst. of Health (May 7, 2021), <https://www.ncbi.nlm.nih.gov/books/NBK570440/>.

⁴⁴ Heesoo Joo et al., *Decline in COVID-19 Hospitalization Growth Rates Associated with Statewide Mask Mandates - 10 States, March-October 2020*, CDC, Morbidity and Mortality Weekly Report, U.S. Nat'l Library of Med., Nat'l Inst. of Health (Feb.

A second study looking at mask mandates between June and September 2020 concluded that counties with mask mandates in place were 43% less likely to have rapid increases in COVID-19 rates.⁴⁵

A third study using data collected between March and December 2020 examined state-issued mask mandates by looking at county-level COVID-19 case and death growth rates after mask mandates. The study found that mask mandates were associated with a decrease in daily COVID-19 case and death growth rates within 20 days of implementation.⁴⁶ This study indicates that mask mandates help limit community transmission of COVID-19 and reduce case and death growth rates.⁴⁷

12, 2021), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7877582/> (attached as Addendum Add. 004-008).

⁴⁵ Sharoda Dasgupta et al., *Differences in Rapid Increases in County-Level COVID-19 Incidence by Implementation of Statewide Closures and Mask Mandates – United States, June 1-September 30, 2020*, 57 *Annals of Epidemiology*, 46-53 (May 2021), <https://www.sciencedirect.com/science/article/pii/S1047279721000211> (attached as Addendum Add. 009-016).

⁴⁶ Gery P. Guy et al., *Association of State-Issued Mask Mandates and Allowing On-Premises Restaurant Dining with County-Level COVID-19 Case and Death Growth Rates – United States, March 1-December 31, 2020*, CDC, *Morbidity and Mortality Weekly Report* (Mar. 12, 2021), <http://dx.doi.org/10.15585/mmwr.mm7010e3> (attached as Addendum Add. 017-022).

⁴⁷ *Id.*

CONCLUSION

The science demonstrates that the ability to impose a state-wide mask mandate is a critical tool to slow the spread of COVID-19 and protect the health of Minnesotans. Governor Walz's executive orders were based on the best public health data available at the time they were issued, and slowed the spread of COVID-19 in Minnesota.

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CERTIFICATE OF BRIEF LENGTH

The undersigned counsel for Amicus Curiae certifies that this brief complies with the requirements of Minnesota Rule of Appellate Procedure 132.01 in that it is printed in 13-point, proportionately spaced typeface utilizing Microsoft Word 2016 and contains 2,835 words, including headings, footnotes, and quotations.

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