

No. 23-411

**In the
Supreme Court of the United States**

VIVEK H. MURTHY, SURGEON GENERAL, ET AL.,

Petitioners,

v.

MISSOURI, ET AL.,

Respondents.

**On Writ of Certiorari to the United States
Court of Appeals for the Fifth Circuit**

**BRIEF OF AMERICAN ACADEMY OF
PEDIATRICS, AMERICAN MEDICAL
ASSOCIATION, AMERICAN ACADEMY OF
FAMILY PHYSICIANS, AMERICAN COLLEGE
OF PHYSICIANS, AND AMERICAN
GERIATRICS SOCIETY AS *AMICI CURIAE*
IN SUPPORT OF PETITIONERS**

JESSICA ANNE MORTON

Counsel of Record

MARK B. SAMBURG

JEFFREY B. DUBNER

Democracy Forward

Foundation

P.O. Box 34553

Washington, DC 20043

(202) 448-9090

jmorton@democracyfor-

ward.org

Counsel for *Amici Curiae*

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INTEREST OF *AMICI CURIAE*¹

Amici curiae are associations representing medical professionals across disciplines. They accordingly have a strong interest in patient care and the promotion of public health.

The American Academy of Pediatrics was founded in 1930 and is a national, not-for-profit professional organization dedicated to furthering the interests of child and adolescent health. The AAP's membership includes over 67,000 primary care pediatricians, pediatric medical subspecialists, and pediatric surgical specialists. Over the past 90 years, AAP has become a powerful voice for child and adolescent health through education, research, advocacy, and the provision of expert advice. AAP members work to prevent harm to children from preventable infectious disease by promoting and administering immunizations.

The American Medical Association is the largest professional association of physicians, residents, and medical students in the United States. Additionally, through state and specialty medical societies and other physician groups seated in its House of Delegates, substantially all physicians, residents, and medical students in the United States are represented in the AMA's policy-making process. The AMA was founded in 1847 to promote the art and science of medicine and the betterment of public health, and these remain its core purposes. AMA members practice in every medical specialty and in every state.

Founded in 1947, the American Academy of Family Physicians is one of the largest medical

¹ Pursuant to Rule 37.6, no party's counsel authored this brief in whole or in part, no party or party's counsel contributed money intended to fund this brief, and no person other than *amici*, their members, and their counsel contributed money to fund this brief.

organizations, representing 129,600 family physicians and medical students nationwide. AAFP seeks to improve the health of patients, families, and communities by advocating for the health of the public and by supporting its members in providing continuous comprehensive health care to all.

The American College of Physicians is the largest medical specialty organization in the United States. Its membership includes 161,000 internal medicine physicians, related subspecialists, and medical students. Internists apply scientific knowledge and clinical expertise to the diagnosis, treatment, and compassionate care of adults across the spectrum from health to complex illness. ACP and its physician members lead the profession in education, standard-setting, and the sharing of knowledge to advance the science and practice of internal medicine.

The American Geriatrics Society is a nationwide, not-for-profit society of geriatrics healthcare professionals founded in 1942 and dedicated to improving the health, independence, and quality of life of older people. AGS's more than 6,000 members include geriatricians, geriatrics nurse practitioners, social workers, family practitioners, physician assistants, pharmacists, and internists who are pioneers in advanced-illness care for older individuals, with a focus on championing interprofessional teams, eliciting personal care goals, and treating older people as whole persons. AGS advocates for policies and programs that support the health, independence, and quality of life of all of us as we age.

Based on decades of research and professional experience, *amici* believe that vaccines are among the most important public health interventions, and that widespread vaccine uptake has substantial public health benefits that cannot be achieved by any other

means. *Amici* have long-standing partnerships with and serve as grantees of petitioner Centers for Disease Control and Prevention to advance their shared mission of promoting safe, effective vaccination in support of robust public health.

SUMMARY OF ARGUMENT

Amici represent hundreds of thousands of medical professionals who have witnessed both the lifesaving promise of vaccination in clinical settings and the ability of misinformation² to destroy that promise. As set forth below, approved vaccines are both effective and safe, but widespread and egregious misinformation reduces their uptake, diverts clinical resources, and costs lives.

Amici take no position on several threshold issues before the Court. *Amici* take no position on whether the government “exercised [such] coercive power or has provided such significant encouragement * * * that the [social media platforms’] choice must in law be deemed to be that of the State.” *Blum v. Yaretsky*, 457 U.S. 991, 1004 (1982). Nor do *amici* take any position on the question of whether the Fifth Circuit’s “entanglement” standard for identifying state action, J.A. 36, is legally correct, or (if so) whether it has been satisfied here. *Amici* recognize, however, that if the Court determines that the petitioners exercised sufficient influence to transform the social media platforms’ content moderation into state action, the Court may ultimately consider whether such state action violated respondents’ First Amendment rights.

² *Amici* refer to “misinformation” throughout this brief, and mean it to refer to all incorrect information about vaccines, including disinformation, which is incorrect information spread with the intent to misinform recipients.

The Western District of Louisiana determined that judicial review of such action would be subject to strict scrutiny, J.A. 195, and no party challenged that conclusion before the Fifth Circuit. Under the strict scrutiny standard, government actions may pass constitutional muster if they were “the least restrictive means to further” a “compelling interest.” *See Sable Communications of California, Inc. v. F.C.C.*, 492 U.S. 115, 126 (1989).

Amici address only a single legal issue: whether the government has a “compelling interest” in combatting vaccine misinformation. Based on their combined medical expertise and extensive review of medical literature, *amici* submit that the government’s interest is compelling.

It is an indisputable scientific fact that vaccinations save lives. Any suggestion to the contrary is not simply an “idea” that “society finds * * * offensive or disagreeable,” J.A. 195; *see also Texas v. Johnson*, 491 U.S. 397, 414 (1989); it is a falsehood. Studies have shown that misinformation on this topic can decrease vaccine uptake, which in turn diminishes vaccines’ ability to control the spread of disease and reduces the number of lives saved. This gives rise to the government’s compelling interest in this case: combatting vaccine misinformation is, at its simplest, the government trying to prevent factually incorrect statements from costing people their lives.

ARGUMENT

I. Vaccinations save lives.

Vaccinations directly save lives in two ways: first, by providing vaccinated individuals with protection against severe health outcomes, including hospitalization and death, and second, by reducing the spread of

vaccine-preventable disease to both vaccinated and unvaccinated people. Both of these benefits also indirectly save lives by reducing burdens on the healthcare system.

A. Vaccination has been shown to reduce mortality rates.

“Vaccines are among the most effective and safe public health interventions available to prevent serious disease and death.”³ People who develop a disease against which they have been vaccinated are generally better protected against severe health outcomes—and most importantly, are less likely to die from that disease—than unvaccinated individuals with the same illness. This was true long before the onset of the COVID-19 pandemic.

Between 1994 and 2013, childhood vaccination is estimated to have prevented 732,000 deaths and 21 million hospitalizations in the United States alone.⁴ Another model concluded that, over the full lifespan of the 2017 U.S. birth cohort (all individuals born in the United States in 2017), routine childhood vaccinations would prevent 31,000 deaths among the cohort.⁵

These models are consistent with empirical studies of specific vaccines. For example, a Spanish study concluded that vaccination against influenza is 60%

³ Inst. of Med., *The Childhood Immunization Schedule and Safety: Stakeholder Concerns, Scientific Evidence, and Future Studies*, Nat'l Acads. Press 1 (2013), <https://bit.ly/3Gc1hhU>.

⁴ Sandra E. Talbird et al., *Impact of Routine Childhood Immunization in Reducing Vaccine-Preventable Diseases in the United States*, 150 *Pediatrics*, no. 3, e2021056013, at 2 (Sept. 2022), <https://bit.ly/46ZECjR>.

⁵ Justin Carrico et al., *Value of the Immunization Program for Children in the 2017 US Birth Cohort*, 150 *Pediatrics*, no. 3, e2021056007, at 5 (Sept. 2022), <https://bit.ly/3RI9ile>.

effective at preventing influenza-associated hospitalizations and 89% effective at preventing severe influenza.⁶ A literature review similarly found that among adults with influenza-associated hospitalizations, those who were vaccinated had a 31% reduced risk of death compared with those who were not.⁷ In another context, while researchers acknowledged that other factors besides vaccination alone likely contributed to the decline in mortality rates, one study concluded that average annual mortality rates from Hepatitis A were 32% lower after the implementation of vaccination recommendations than they had been in the prevaccine period.⁸

People who receive vaccinations against COVID-19 also experience significantly lower mortality rates—even when the vaccine does not prevent them from becoming infected. One study concluded that, through December 2021, every 10% increase in vaccination coverage (defined as the percentage of adults who had received at least one dose of the vaccine) was associated with an 8% reduction in mortality rates.⁹ According to another study, as of January 2022,

⁶ Jesús Castilla et al., *Influenza Vaccine Effectiveness in Preventing Outpatient, Inpatient, and Severe Cases of Laboratory-Confirmed Influenza*, 57 *Clinical Infectious Diseases* 167, 169–70 (2013), <https://bit.ly/414fJT1>.

⁷ Jill M. Ferdinands et al., *Does Influenza Vaccination Attenuate the Severity of Breakthrough Infections? A Narrative Review and Recommendations for Further Research*, 39 *Vaccine* 3678, 3691 (2021).

⁸ Tara M. Vogt et al., *Declining Hepatitis A Mortality in the United States During the Era of Hepatitis A Vaccination*, 197 *J. Infectious Diseases* 1282, 1283 (2008), <https://bit.ly/3R5uBMn>.

⁹ Amitabh Bipin Suthar et al., *Public Health Impact of COVID-19 Vaccines in the United States: Observational Study*, 377 *BMJ*, e069317, at 3 (Mar. 2022), <https://bit.ly/41ebHat>.

vaccination against COVID-19 reduced mortality by as much as 40% among hospitalized patients.¹⁰ In absolute terms, COVID-19 vaccinations are estimated to have prevented 235,000 COVID-associated deaths in the United States among vaccinated individuals 18 years of age and older just between December 1, 2020 and September 30, 2021.¹¹

Vaccination against COVID-19 also significantly reduces severe illness. One study concluded that from January to April 2022, when the Omicron variant of SARS-CoV-2 was predominant, the hospitalization rate for unvaccinated individuals was 10.5 times higher than for individuals who had received a primary vaccine series and a single booster dose.¹² Importantly, those vaccinated individuals who nevertheless required hospitalization were often older or otherwise members of “more medically fragile populations,”¹³ meaning that “those who were hospitalized despite vaccination may be more vulnerable to severe infection at baseline.”¹⁴ The original vaccine series may also have “attenuate[d] disease severity among

¹⁰ Timothy B. Baker et al., *The Relationship of COVID-19 Vaccination with Mortality Among 86,732 Hospitalized Patients: Subpopulations, Patient Factors, and Changes over Time*, 38 J. Gen. Internal Med. 1248, 1254 (2023), <https://bit.ly/3MQBv6u>.

¹¹ Molly K. Steele et al., *Estimated Number of COVID-19 Infections, Hospitalizations, and Deaths Prevented Among Vaccinated Persons in the US, December 2020 to September 2021*, 5 JAMA Network Open, no. 7, e2220385, at 1 (Jul. 6, 2022), <https://bit.ly/47n6tf4>.

¹² Fiona P. Havers et al., *COVID-19-Associated Hospitalizations Among Vaccinated and Unvaccinated Adults 18 Years or Older in 13 US States, January 2021 to April 2022*, 182 JAMA Internal Med. 1071, 1075 (2022), <https://bit.ly/49LryRJ>.

¹³ *Ibid.*

¹⁴ *Id.* at 1075–77.

patients who develop COVID-19 despite vaccination,” such that “the total benefits of vaccination exceed those estimated from the prevention of hospitalization alone.”¹⁵

B. Vaccination reduces the prevalence of deadly diseases.

Widespread vaccination can also significantly impede or even eliminate the spread of preventable illnesses, protecting even unvaccinated individuals. As a result, routine childhood vaccinations are estimated to have prevented 322 million cases of vaccine-preventable disease in the United States between 1994 and 2013,¹⁶ and will prevent an estimated 17 million cases of vaccine-preventable disease just among individuals born in the United States in 2017.¹⁷

Indeed, vaccinations can so effectively prevent infection that they have essentially eliminated many formerly prevalent diseases from the U.S. population. More than one in every one thousand people in the United States had smallpox in 1920,¹⁸ but following widespread vaccination against the disease, no

¹⁵ Mark W. Tenforde et al., *Association Between mRNA Vaccination and COVID-19 Hospitalization and Disease Severity*, 326 JAMA 2043, 2051 (2021), <https://bit.ly/3R6qfFW>.

¹⁶ Talbird et al., *supra* n.4, at 2.

¹⁷ Carrico et al., *supra* n.5, at 5.

¹⁸ Compare Charlene M.C. Rodrigues & Stanley A. Plotkin, *Impact of Vaccines; Health, Economic and Social Perspectives*, 11 Frontiers in Microbiology, July 2020, at 4 tbl. 1, <https://bit.ly/3QMFB0D> (110,672 smallpox cases in the United States in 1920), with U.S. Census Bureau, *1920 Fast Facts*, <https://bit.ly/47Hly17> (last visited Dec. 19, 2023) (U.S. resident population was 106,021,537 in 1920).

outbreak has occurred domestically since 1949.¹⁹ Approximately one in every eight thousand people in the United States had paralytic polio in 1952,²⁰ and again, thanks to the advent of polio vaccinations, there have been no cases of wild polio in the United States since 1979.²¹ For other diseases with widely followed vaccination protocols, the disease reduction has been similarly staggering, even if not total: despite massive growth in the U.S. population since diphtheria and rubella were at their respective peaks, the annual case counts of diphtheria and rubella have both declined by more than 99.95% from those peaks, while the annual case counts of tetanus, mumps, and pertussis have all declined by more than 92.5% from their respective peaks.²² The reason for these declines, and for the attendant hundreds of thousands of lives saved,²³ is simple: vaccinations work.

Vaccinations are able to reduce the prevalence of communicable disease on so dramatic a scale because

¹⁹ FDA, *Smallpox Preparedness and Response Updates from FDA*, <https://bit.ly/40J7mMi> (last updated May 3, 2023).

²⁰ *Compare* Rodrigues & Plotkin, *supra* n.18, at 4 tbl. 1 (21,269 cases of paralytic polio in the United States in 1952), *with* Bureau of the Census, U.S. Dep't of Com., Ser. P-25 No. 69, *Current Population Reports: Population Estimates 1* (Mar. 6, 1953), <https://bit.ly/3G6rPkE> (U.S. resident population was 154,609,000 or higher in 1952).

²¹ CDC, *Why CDC is Working to End Polio Globally*, <https://bit.ly/415gZFa> (last updated Sep. 27, 2023).

²² Rodrigues & Plotkin, *supra* n.18, at 4 tbl. 1.

²³ S.J. Olshanksy & L. Hayflick, *The Role of the WI-38 Cell Strain in Saving Lives and Reducing Morbidity*, 4 AIMS Pub. Health 127, 127 (2017), <https://bit.ly/3G3Ugjp> (estimating 450,000 lives saved just by vaccinations against polio, mumps, measles, rubella, varicella, herpes zoster, adenovirus, rabies, and hepatitis A).

of the concept of herd immunity: when a sufficiently large portion of a population is immune to a given disease, its “community circulation is reduced below the level of significant public health threat.”²⁴ Herd immunity from a disease is possible because the reduction in infection or infectiousness among immune individuals “can decrease the risk of infection among those who remain susceptible in the population.”²⁵ Elimination of some diseases, such as wild polio in the United States, was possible only because of herd immunity.²⁶ The proportion of a population that must be immune for this to occur varies based on a number of factors.²⁷

Herd immunity against COVID-19 may now be an impossibility,²⁸ but vaccinations against COVID-19 nevertheless offer important protection, both directly to those who receive the vaccine and, by reducing both infection and infectiousness among vaccinated individuals, indirectly to unvaccinated individuals. COVID-19 vaccines—those predominantly at issue in this case—were initially about 90% effective against infection by SARS-CoV-2, the causative agent of COVID-19.²⁹ Vaccinations against COVID-19 are

²⁴ David M. Morens et al., *The Concept of Classical Herd Immunity May Not Apply to COVID-19*, 226 J. Infectious Diseases 195, 195 (2022), <https://bit.ly/3RjzAtZ>.

²⁵ Paul Fine et al., “*Herd Immunity*”: *A Rough Guide*, 52 Clinical Infectious Diseases 911, 912 (Apr. 1, 2011), <https://bit.ly/46lui5D>.

²⁶ *See ibid.*

²⁷ *Ibid.*; Morens et al., *supra* n.24, at 195–96.

²⁸ *See* Morens et al., *supra* n.24, at 196.

²⁹ Kazem Rahmani et al., *The Effectiveness of COVID-19 Vaccines in Reducing the Incidence, Hospitalization, and Mortality From COVID-19: A Systematic Review and Meta-Analysis*, 10 Frontiers Pub. Health 873596, at 14 (Aug. 26, 2022), <https://bit.ly/47lnLcb>.

estimated to have prevented 27 million infections in the United States between December 1, 2020 and September 30, 2021.³⁰ Although initial vaccine effectiveness against COVID-19 infection has waned over time³¹ in part due to evolving variants of SARS-CoV-2,³² the initial mRNA vaccine series remained about 50% effective against infections 10 months after administration.³³

Vaccinations against COVID-19 can also help prevent the spread of the disease from vaccinated individuals who develop an infection to individuals who are unvaccinated and to those for whom vaccines are ineffective for medical reasons. A study of COVID-19 across California prison populations found significantly decreased transmissibility associated with breakthrough cases in vaccinated and/or previously infected individuals, as opposed to cases in unvaccinated individuals.³⁴ While SARS-CoV-2 has continued to evolve since that study, as of May 2022, when

³⁰ Steele et al., *supra* n.11, at 1.

³¹ Ruth Link-Gelles et al., *Effectiveness of Bivalent mRNA Vaccines in Preventing Symptomatic SARS-CoV-2 Infection—Increasing Community Access to Testing Program, United States, September–November 2022*, 71 *Morbidity & Mortality Wkly. Rep.* 1526, 1527 (2022), <https://bit.ly/3MRZ5jr>.

³² Morens et al., *supra* n.24, at 196 (“SARS-CoV-2 mutates continually into new variants that can escape immunity derived from infections and vaccines.”).

³³ Nana Wu et al., *Long-term Effectiveness of COVID-19 Vaccines Against Infections, Hospitalizations, and Mortality in Adults: Findings from a Rapid Living Systematic Evidence Synthesis and Meta-Analysis Up to December, 2022*, 11 *Lancet Respiratory Med.* 439, 446 tbl. 3 (2023), <https://bit.ly/3uuQlJB>.

³⁴ Sophia T. Tan et al., *Infectiousness of SARS-CoV-2 Breakthrough Infections and Reinfections During the Omicron Wave*, 29 *Nature Med.* 358, 358 (2023), <https://bit.ly/3tfZUfy>.

compared to an unvaccinated individual without a prior SARS-CoV-2 infection, an individual who had received even a single dose of a COVID-19 vaccine and had not previously been infected had a 22% lower risk of transmitting COVID-19, an unvaccinated individual with a prior infection had a 23% lower risk of transmitting COVID-19, and an individual who had both been vaccinated and previously been infected had a 40% lower risk of transmitting COVID-19.³⁵ The risk of transmission by vaccinated individuals decreased even further with additional doses of the vaccine.³⁶

C. Widespread vaccination reduces the burden on the medical system.

In addition to protecting vaccinated individuals from severe health outcomes and reducing the infection risk for both vaccinated and non-vaccinated individuals, by reducing the load on the healthcare system, vaccinations indirectly produce better health outcomes for patients with ailments unrelated to the relevant disease.

It is axiomatic that, if any given communicable disease infects fewer individuals and causes less severe symptoms among some members of the infected population, treatment of that disease will become less resource-intensive. Researchers have estimated that the first twenty years of the Vaccines for Children Program, from 1994 through 2013, will prevent approximately 322 million illnesses and 21 million hospitalizations.³⁷ Within the COVID-19 context, one

³⁵ *Ibid.*

³⁶ *Ibid.*

³⁷ Cynthia G. Whitney et al., *Benefits from Immunization During the Vaccines for Children Program Era – United States, 1994–*

study estimated the original mRNA vaccine course was 85% effective at preventing COVID-19 hospitalizations between mid-March and mid-August 2021.³⁸ Another model estimated that COVID-19 vaccinations prevented 1.6 million hospitalizations among vaccinated adults in the United States between December 1, 2020 and September 30, 2021 alone.³⁹ A third model estimated that between December 2020 and November 2022, COVID-19 vaccination in the U.S. prevented more than 18.5 million additional hospitalizations.⁴⁰ The reduction in hospitalizations resulting from vaccinations is significant not only as a proxy for health outcomes for those individuals, but also for the increased strain on hospitals and healthcare professionals that was avoided. Further research has determined that individuals who are infected with COVID-19 make greater use of the healthcare system during the six months following acute illness as well.⁴¹

Research confirms that greater strain on medical resources leads to worse health outcomes. Pre-COVID-19 research had already identified that crowding in emergency departments leads to clinician

2013, 63 *Morbidity & Mortality Wkly. Rep.* 352, 352 (2014), <https://bit.ly/47FD92S>.

³⁸ Tenforde et al., *supra* n.15, at 2048.

³⁹ Steele et al., *supra* n.11, at 4.

⁴⁰ Meagan C. Fitzpatrick et al., *Two Years of U.S. COVID-19 Vaccines Have Prevented Millions of Hospitalizations and Deaths*, The Commonwealth Fund (Dec. 13, 2022), <https://bit.ly/40O0Vrh>.

⁴¹ Sara Y. Tartof et al., *Health Care Utilization in the 6 Months Following SARS-CoV-2 Infection*, 5 *JAMA Network Open*, e2225657, at 2 (Aug. 12, 2022), <https://bit.ly/49W3EDt>.

stress, increased errors, and longer inpatient stays.⁴² Predictably, therefore, inpatient mortality increases when emergency departments are crowded.⁴³ One study estimates that when national intensive care unit beds are 75% full, approximately 12,000 excess deaths occur over the following two weeks as a result of that system strain. That number increases to 80,000 excess deaths over the same two-week period following ICU beds exceeding 100% capacity.⁴⁴ Because vaccination can reduce both the number of people who are infected with COVID-19 and the need for hospitalization among vaccinated individuals who develop infections, vaccinations reduce the load on the healthcare system, saving additional lives.

D. FDA-approved vaccines are safe.

Vaccines are not only effective; they are also safe. Before the Food and Drug Administration approves vaccinations for administration to patients, scientists conduct extensive clinical trials, and government agencies closely review the resulting data.⁴⁵ After vaccines are approved, government agencies actively monitor the vaccines' safety.⁴⁶ As a result, "serious

⁴² Claire Morley et al., *Emergency Department Crowding: A Systematic Review of Causes, Consequences and Solutions*, 13 PLOS One, Aug. 30, 2018, at 20, 24, <https://bit.ly/3SI9mCA>.

⁴³ *Ibid.*

⁴⁴ Geoffrey French et al., *Impact of Hospital Strain on Excess Deaths During the COVID-19 Pandemic – United States, July 2020-July 2021*, 70 Morbidity & Mortality Wkly. Rep. 1613, 1613 (Nov. 19, 2021), <https://bit.ly/49JLaG8>.

⁴⁵ FDA, *Vaccine Development – 101*, <https://bit.ly/46n6q1s> (last updated Dec. 14, 2020).

⁴⁶ FDA, *COVID-19 Vaccine Safety Surveillance*, <https://bit.ly/40MbP0R> (last updated Jan. 13, 2023); Nicola P.

adverse events from vaccines are extremely rare today and those risks are substantially smaller than the risks from vaccine-preventable diseases.”⁴⁷

With such rigorous protocols in place, it is unsurprising that COVID-19 vaccines, like other approved vaccines, are extremely safe, even for vulnerable populations. A comprehensive review of mRNA vaccine recipients concluded that adverse events after mRNA vaccinations “were transient, self-limiting, and mild to moderate,” noting that the vaccines are “safe for use in immunocompromised populations.”⁴⁸ Another study of 6.2 million COVID-19 vaccine recipients concluded that serious side effects following the initial course of vaccines are extremely rare.⁴⁹ For example, although there is a small risk of developing myocarditis as a side effect of COVID-19 vaccination, that risk is more than seven times higher in people who were infected with SARS-CoV-2 itself.⁵⁰ Subsequent

Klein et al., *Surveillance for Adverse Events After COVID-19 mRNA Vaccination*, 326 JAMA 1390, 1391 (2021), <https://bit.ly/49H8xjk>.

⁴⁷ Dorit Rubinstein Reiss & Lois A. Weithorn, *Responding to the Childhood Vaccination Crisis: Legal Frameworks and Tools in the Context of Parental Vaccine Refusal*, 63 Buff. L. Rev. 881, 938 (2015), <https://bit.ly/3uD8wgx> (citations omitted). For example, “studies suggest that it is more likely that a person will get [Guillain-Barré Syndrome] after getting the flu than after vaccination.” CDC, *Guillain-Barré Syndrome*, <https://bit.ly/400Ia74> (last reviewed Feb. 6, 2023).

⁴⁸ Wanqian Xu et al., *Real-World Safety of COVID-19 mRNA Vaccines: A Systematic Review and Meta-Analysis*, 11 Vaccines, no. 6, 1118, at 13 (2023), <https://bit.ly/3utr172>.

⁴⁹ Klein et al., *supra* n.46, at 1394–95.

⁵⁰ Navya Voleti et al., *Myocarditis in SARS-CoV-2 Infection vs. COVID-19 Vaccination: A Systematic Review and Meta-Analysis*,

studies concluded that serious side effects were also extremely rare following a first or second COVID-19 booster shot.⁵¹ A review of 247,011 doses of mRNA vaccines administered to children between the ages of six months and five years found no “safety signal” for adverse events resulting from vaccination.⁵² Put simply, there is no increased mortality risk among recipients of a COVID-19 vaccine, and research has indicated that vaccine recipients even have lower non-COVID-19 mortality risks than unvaccinated people.⁵³

This high level of safety is consistent with a long track record of vaccine safety in the United States. A 2020 pre-COVID-19-vaccine systematic review of the risks associated with the vaccines routinely recommended in the United States concluded that vaccination is “safe across populations” and noted that this conclusion was “consistent with other recent

Frontiers in Cardiovascular Med. at 9 (2022), <https://bit.ly/3RDwVdN>.

⁵¹ Anne M. Hause et al., *Safety Monitoring of an Additional Dose of COVID-19 Vaccine – United States, August 12-September 19, 2021*, 70 Morbidity & Mortality Wkly. Rep. 1379, 1380 (2021), <https://bit.ly/3R7RJuR>; Anne M. Hause et al., *Safety Monitoring of COVID-19 mRNA Vaccine Second Booster Doses Among Adults Aged ≥ 50 Years – United States, March 29, 2022-July 10, 2022*, 71 Morbidity & Mortality Wkly. Rep. 971, 975 (2022), <https://bit.ly/49IfoJh>.

⁵² Kristin Goddard et al., *Safety of COVID-19 mRNA Vaccination Among Young Children in the Vaccine Safety Datalink*, 152 Pediatrics, no. 1, e2023061894, at 2 (June 2023), <https://bit.ly/40SI26s>.

⁵³ Stanley Xu et al., *COVID-19 Vaccination and Non-COVID-19 Mortality Risk – Seven Integrated Health Care Organizations, United States, December 14, 2020-July 31, 2021*, 70 Morbidity & Mortality Wkly. Rep. 1520, 1521 (2021), <https://bit.ly/3up5pIY>.

systematic reviews of vaccine safety.”⁵⁴ That report concluded that serious adverse reactions to vaccinations—for example, anaphylaxis, idiopathic thrombocytopenic purpura, febrile seizures, or illness—are “rare.”⁵⁵

Some use the Vaccine Adverse Event Reporting System (VAERS) to deny the safety of approved vaccines.⁵⁶ But the information in VAERS in no way undermines vaccines’ strong safety track record. VAERS is intended to serve as an early warning system for potential problems with vaccinations, not an authoritative report of events or causal links.⁵⁷ Because anyone can submit a VAERS report, the factual reliability of any given report is necessarily limited. Even more critically, however, submission of an adverse event to VAERS is not indicative of a causal relationship between a vaccination and the event. “Some reports to VAERS might represent true vaccine reactions, and others might be coincidental adverse health events not related to vaccination at all.”⁵⁸ Treating any given report (or all reports) in VAERS as accurate, truthful, and caused by vaccines ignores known limitations of VAERS and, in the case of

⁵⁴ Courtney Gidengil et al., *Safety of Vaccines Used for Routine Immunization in the United States: An Update*, Agency for Healthcare Resch. & Quality 145 (May 2021), <https://bit.ly/410E9gd>.

⁵⁵ *Ibid.*

⁵⁶ Meredith Wadman, *Antivaccine Activists Use a Government Database on Side Effects to Scare the Public*, *Sci.* (May 26, 2021), <https://bit.ly/47lhcXb>.

⁵⁷ CDC, *Vaccine Adverse Event Reporting System Fact Sheet*, <https://bit.ly/3uiOTKp> (last visited Dec. 19, 2023).

⁵⁸ CDC, *Vaccine Adverse Event Reporting System (VAERS)*, <https://bit.ly/3G9cUGx> (last reviewed Oct. 19, 2023).

misinformation about VAERS entries, results in claims that are unsupported by evidence.

II. Misinformation about vaccines meaningfully interferes with their lifesaving role in a well-functioning public health system.

Despite the foregoing, vaccines themselves do not save lives—only people being vaccinated save lives. “A vaccine that remains in the vial is 0% effective even if it is the best vaccine in the world.”⁵⁹ Vaccine misinformation, which has reduced vaccine uptake, costs lives and diverts significant resources in clinical care—profoundly harming public health and impairing a compelling governmental interest.

A. Vaccine misinformation has led to declining vaccine uptake.

Although vaccination programs provide clear benefits to public health, as detailed above, they are all too easily undermined by misinformation that misleads the public about their safety and efficacy.

Many patients will have reasonable questions about the methods by which a vaccine was tested, the length of any such study, and the risks and benefits of receiving a vaccine in the context of a particular patient’s medical history. *Amici* and their members welcome these conversations with their patients and do not seek to stifle scientific debate as new studies add to medical knowledge and the consensus of the medical community evolves.

The misinformation with which *amici* are concerned here, however, is quite different. For instance,

⁵⁹ Walter A. Orenstein & Rafi Ahmed, *Simply Put: Vaccination Saves Lives*, 114 PNAS 4031, 4032 (Apr. 10, 2017), <https://bit.ly/3G4ezgi>.

some misinformants claim that people who have received COVID-19 vaccinations have become magnetized (such that metal utensils will stick to their foreheads), or that vaccines are somehow tethered to 5G cellular towers.⁶⁰ Others have claimed that the COVID-19 vaccine will implant recipients with a tracking microchip controlled by Bill Gates.⁶¹ Others claim that vaccines from COVID-19 to the flu will render recipients infertile.⁶² Others claim that diseases targeted by vaccination (such as polio) never existed at all.⁶³ And still others claim that routine vaccines for children cause autism⁶⁴ or cancer.⁶⁵ Several of

⁶⁰ Andrea Salcedo, *A Doctor Falsely Told Lawmakers Vaccines Magnetize People: ‘They Can Put a Key on Their Forehead. It Sticks.’*, Wash. Post (June 9, 2021), <https://wapo.st/47ixxMh>.

⁶¹ Reuters, *Fact Check: RFID Microchips Will Not Be Injected with the COVID-19 Vaccine, Altered Video Features Bill and Melinda Gates and Jack Ma* (Dec. 4, 2020, 3:52 PM), <https://reut.rs/40GO9e8>.

⁶² Beth L. Hoffman et al., *It’s Not All About Autism: The Emerging Landscape of Anti-Vaccination Sentiment on Facebook*, 37 *Vaccine* 2216, 2218 (2019) (describing misinformation content alleging that the flu vaccine “contains spermicide and is used for population control”); see also Jennifer Abbasi, *Widespread Misinformation About Infertility Continues to Create COVID-19 Vaccine Hesitancy*, 327 *JAMA* 1013, 1014 (2022), <https://bit.ly/3QIhFeX> (describing similarities between misinformation about HPV and COVID-19 vaccines).

⁶³ Hoffman et al., *supra* n.62, at 2218.

⁶⁴ See, e.g., Michael Davidson, *Vaccination as a Cause of Autism—Myths and Controversies*, 19 *Dialogues in Clinical Neuroscience* 403 (Dec. 2017), <https://bit.ly/3QYJ7Xb>.

⁶⁵ Hoffman et al., *supra* n.62, at 2218.

these inaccurate claims were the subject of the communications at issue in this case.⁶⁶

None of these assertions are supported by credible evidence.⁶⁷ Surprisingly, however, these can be more than fringe beliefs; as of October 2021, polling showed that 31% of adults surveyed either believed or were uncertain of the veracity of the claim that COVID-19 vaccinations cause infertility, and 24% of adults surveyed either believed or were uncertain of the veracity of the claim that COVID-19 vaccines contain a microchip.⁶⁸ And another poll showed that the number of people who incorrectly believe that childhood vaccines cause autism has risen a statistically significant amount just since June 2021.⁶⁹

⁶⁶ See J.A. 138–45 (describing examples of misinformation about population reduction, magnetization, microchips, and more).

⁶⁷ See, e.g., Mayo Clinic Health Sys., *Debunking COVID-19 Myths*, <https://mayocl.in/3MSnhCl> (last updated Aug. 2, 2023); Beatrice Dupuy, *COVID-19 Vaccines Do Not Cause Magnetism in Bodies*, AP News (June 9, 2021, 1:43 PM), <https://bit.ly/3SRfuIQ>; Katie Tarasov, *Why It's Not Possible for the Covid Vaccines to Contain a Magnetic Tracking Chip That Connects to 5G*, CNBC (Oct. 1, 2021, 11:40 AM), <https://cnb.cx/3NhuJr1>; Reuters Fact Check, *No Evidence COVID-19 Vaccines Have Caused Increase In Cancers, Contrary To Claims Made On Social Media*, Reuters (Feb. 11, 2022, 3:02 PM), <https://reut.rs/46oD1nt>; CDC, *Autism*, <https://bit.ly/46s1aK3> (last reviewed Dec. 1, 2021).

⁶⁸ Liz Hamel et al., *KFF COVID-19 Vaccine Monitor: Media and Misinformation*, KFF (Nov. 8, 2021), <https://bit.ly/47Brja3>.

⁶⁹ Annenberg Pub. Pol. Ctr., *Vaccine Confidence Falls as Belief in Health Misinformation Grows* (Nov. 1, 2023), <https://bit.ly/3ur14om>. This study also shows a rise within the last year of people who believe that COVID-19 mRNA vaccines cause cancer, as well as significant declines since August 2022 in the number of people who believe in the safety of the MMR, pneumonia, and COVID-19 vaccines.

Social media plays an outsized role in the proliferation of this harmful misinformation. Even where these claims do not originate on social media, they frequently are repeated there and begin to circulate, sometimes going viral themselves.⁷⁰ In the United Kingdom, a study pre-dating the COVID-19 pandemic found that 41% of parents with minor children were sometimes or often exposed to negative messages about vaccines on social media; this was true for 50% of parents with children under the age of 5.⁷¹ Doctors have observed this trend as well: for example, one hospitalist, who has been an attending physician, mostly in rural areas, since 2005, reports that “[a]lmost all patients [she’s] heard cite their misinformation comes from Facebook.”⁷²

Misinformation about vaccination has resulted in consequences far beyond social media: declining vaccination uptake by the public. This is not a new phenomenon. More than twenty years ago, even before the rise of social media, a comparative study found pertussis (whooping cough) incidence to be 10 to 100 times lower in countries that maintained high coverage of diphtheria-tetanus-pertussis vaccination in comparison to countries where anti-vaccine movements had undermined vaccination efforts.⁷³ The rise of the internet and social media has exacerbated this threat to public health by accelerating the spread and

⁷⁰ See, e.g., Salcedo, *supra* n.60; Reuters, *supra* n.61 (describing a video that had been “shared over 27,100 times on Facebook”).

⁷¹ Royal Soc’y for Pub. Health, *Moving the Needle: Promoting Vaccination Uptake Across the Life Course* 12 (Jan. 2019), <https://bit.ly/3R3e4JQ>.

⁷² Statement received from ACP Nov. 17, 2023.

⁷³ E.J. Gangarosa et al., *Impact of Anti-Vaccine Movements on Pertussis Control: The Untold Story*, 351 *Lancet* 356, 356 (1998).

increasing the efficacy of vaccine misinformation. One German study, for example, found that “viewing typical vaccine-critical websites for only five to 10 minutes increases the perception of risk” regarding the most common vaccinations for young children and “acquiring information about vaccinations on a vaccine-critical website significantly decreased the intentions to vaccinate.”⁷⁴ And more recently, a study in the U.S. found that the number of participants who expressed definite intentions to obtain the COVID-19 vaccine dropped by more than 6% (relative to control groups that had been exposed to factual information) after reviewing only five pieces of vaccine misinformation.⁷⁵ Another study found that online misinformation helps forecast vaccine hesitancy strongly at a county level, indicating that “there is a lag of around 2–6 days from misinformation posted in a county to a corresponding increase in vaccine hesitancy in the same county.”⁷⁶

⁷⁴ Cornelia Betsch et al., *The Influence of Vaccine-Critical Websites on Perceiving Vaccination Risks*, 15 *J. Health Psych.* 446, 451, 453, 454 (2010).

⁷⁵ Sahil Loomba et al., *Measuring the Impact of COVID-19 Vaccine Misinformation on Vaccination Intent in the UK and USA*, 5 *Nature Hum. Behav.* 337, 338 (2021), <https://bit.ly/3RLSDxc>. Another study concerning HPV vaccines has shown a strong correlation between negative representations of vaccines (including misinformation) on Twitter and lower HPV vaccine coverage. See Adam G. Dunn et al., *Mapping Information Exposure on Social Media to Explain Differences in HPV Vaccine Coverage in the United States*, 35 *Vaccine* 3033, 3037 (2017), <https://bit.ly/3MPwY4p>.

⁷⁶ Francesco Pierri et al., *Online Misinformation Is Linked to Early COVID-19 Vaccination Hesitancy and Refusal*, 12 *Sci. Reps.* 5966, at 4 (2022), <https://bit.ly/46ZHVaz>.

Declining vaccination uptake has resulted in a resurgence of diseases that previously verged on eradication. For example, measles was declared eliminated from the United States in 2000.⁷⁷ But in December 2014, an outbreak began at Disneyland—ultimately resulting in 110 cases in California residents, 96 of which occurred in individuals who were unvaccinated or whose vaccination status was unknown.⁷⁸ And in 2017, more than 70 Minnesotans were diagnosed with measles, resulting in 21 hospitalizations.⁷⁹ All but four of those afflicted were unvaccinated: the outbreak hit hardest in a community that had successfully been targeted by misinformation linking the measles, mumps, and rubella vaccine to autism.⁸⁰ Similarly, across a series of measles cases and outbreaks that spanned 31 states in 2019, 1,249 cases of measles were reported, with 1,107 of those occurring in people who were unvaccinated or whose vaccination status was unknown.⁸¹ And in 2022, Columbus, Ohio suffered an outbreak of 85 confirmed measles cases in children—none of whom were fully vaccinated against

⁷⁷ CDC, *Measles (Rubeola)*, <https://bit.ly/3SMLQo8> (last reviewed Nov. 5, 2020).

⁷⁸ Jennifer Zipprich et al., *Measles Outbreak — California, December 2014–February 2015*, 64 *Morbidity & Mortality Wkly. Rep.* 153, 153 (2015), <https://bit.ly/41m0ogs>.

⁷⁹ Jacqueline Howard, *Minnesota Measles Outbreak Exceeds Last Year’s Nationwide Numbers*, CNN (June 2, 2017, 3:52 PM), <https://cnn.it/3MJxzEI>.

⁸⁰ *Id.*

⁸¹ Manisha Patel et al., *National Update on Measles Cases and Outbreaks—United States, January 1–October 1, 2019*, 68 *Morbidity & Mortality Wkly. Rep.* 893, 893 (Oct. 11, 2019), <https://bit.ly/3Tcgo2P>.

the virus.⁸² During the outbreak, 36 children—42% of those infected—were hospitalized.⁸³ Pertussis, too, has become more widespread, reaching levels “that have not been observed in more than 5 decades.”⁸⁴

This consequence of misinformation is illustrated not only by data, but by individual human cost. One doctor, for example, has described a patient who refused COVID-19 vaccination, against the advice of her pediatrician and obstetrician, because she was breast-feeding.⁸⁵ She was later hospitalized.⁸⁶ Another primary care physician, working out of a large health system in Atlanta, described “the scenario [he] see[s] the most where during the height of the pandemic younger adults and individuals were jeopardizing the lives and health of older family members and patients driven by what they shared and believe[d], spreading misinformation.”⁸⁷ A geriatrics health care professional similarly described a “frail 92 year old patient” who “has refused all Covid vaccines to date” as “[h]er son told her it was dangerous based on reports he read

⁸² Joel Oliphint, *Top Doctors: Anatomy of the Central Ohio Measles Outbreak and Why It Might Not Be the Last*, Columbus Monthly (Aug. 15, 2023, 6:17 PM), <https://bit.ly/46rjNOg>; see also Elizabeth C. Tiller et al., *Notes from the Field: Measles Outbreak – Central Ohio, 2022–2023*, 72 Morbidity & Mortality Wkly. Rep. 847, 847 (Aug. 4, 2023), <https://bit.ly/3MP5E6u>.

⁸³ Tiller, *supra* n.82, at 847.

⁸⁴ Varun K. Phadke et al., *Association Between Vaccine Refusal and Vaccine-Preventable Diseases in the United States: A Review of Measles and Pertussis*, 315 JAMA 1149, 1153 (2016), <https://bit.ly/3SSeK6m>.

⁸⁵ Heather Hollingsworth, *Doctors Grow Frustrated Over COVID-19 Denial, Misinformation*, AP News (Oct. 4, 2021, 4:05 PM), <https://bit.ly/47CoRjB>.

⁸⁶ *Id.*

⁸⁷ Statement received from ACP Nov. 17, 2023.

online.”⁸⁸ Although the doctor “[t]ook a long time to discuss” vaccination with the patient, “[t]here was no convincing her.”⁸⁹

B. Combatting vaccine misinformation after its acceptance is not reliably effective and diverts resources from clinical care.

The detrimental effects of vaccine misinformation are particularly visible in clinical settings, where doctors and other healthcare professionals are on the front lines against misinformation that has not been stopped at its source. The experiences of *amici* and their members show that post hoc efforts to mitigate the harm from vaccine misinformation are less effective at preserving public health than reducing the spread of misinformation in the first place, because clinical efforts to rebut misinformation during individual medical encounters use up scarce medical resources and can even reduce patients’ willingness to obtain needed care.

Patients bring their concerns about vaccines—often influenced by misinformation they have seen on social media—into their doctors’ offices “almost daily.”⁹⁰ Patients share their concerns that vaccine manufacturers are “putting a tracker in and it makes me magnetic,” that there is “actually poison in the mRNA vaccine,” that “there’s a chip in the [COVID-19] vaccine that will take over their DNA,” or that the COVID-19 vaccine will “damage * * * their testicles.”⁹¹ Citing social media, patients have also

⁸⁸ Statement received from AGS Nov. 28, 2023.

⁸⁹ *Id.*

⁹⁰ Am. Med. Ass’n, *Physician Leaders Discuss COVID-19 Vaccine Misinformation* (May 26, 2021), <https://bit.ly/3R3n41B>.

⁹¹ Hollingsworth, *supra* n.85.

expressed concerns that the COVID-19 vaccine itself causes long COVID.⁹²

These concerns are not rarities. An AAP survey of pediatricians found that 56% encountered misinformation about the COVID-19 vaccine from patients and their families about once a week or more; 38% encountered misinformation about the HPV vaccine at least weekly, and 35% encountered misinformation about routine childhood vaccines at least weekly.⁹³ The misinformation described above results in incorrect patient beliefs, affecting *amici*'s members' ability to provide care to their patients. One internal medicine specialist who has practiced in rural Alaska for twenty-five years reports that she has "lost count of the numbers of unfounded concerns brought up by patients."⁹⁴ Her patients have had "a lot of concern about microchips being implanted by the vaccine, and resultant control by the government or foreign powers," as well as "concerns about reduced fertility and cardiac toxicity."⁹⁵ An academic pediatrician in Kansas has noted parents' (unsubstantiated) fears that the COVID-19 vaccine is causing a high rate of sudden death in student athletes based on misinformation on Facebook and X (formerly Twitter).⁹⁶ A general pediatrician working in Louisville has seen patients cite "things [they]'ve heard online" for reasons to refuse vaccines, such as fears that the COVID-19 vaccine would cause them to repel water, or cause them to be

⁹² Statement received from ACP Nov. 17, 2023.

⁹³ Am. Acad. of Pediatrics, *Going PLACES*, at 3 fig. 2 (Sept. 2023), <https://bit.ly/3uv1dHm>.

⁹⁴ Statement received from ACP Nov. 17, 2023.

⁹⁵ *Id.*

⁹⁶ Statement received from AAP Nov. 17, 2023.

magnetized.⁹⁷ Another pediatrics infectious diseases physician with thirty-six years of experience has heard parents raise the concern that the COVID-19 vaccine was “developed to kill people of color.”⁹⁸ Pediatricians report that these concerns about vaccination have moved beyond the COVID-19 vaccine, and are also causing families that had “never worried about the influenza vaccine” to now “refus[e] it entirely.”⁹⁹

Vaccine misinformation poses significant challenges to clinicians who must determine the best method for correcting their patients’ understandings—a conversation that can easily go awry. One study, for example, found that while correcting flu vaccine misinformation was successful at reducing misperceptions about the vaccine, it nevertheless significantly *decreased* the likelihood of vaccine uptake among patients who were highly concerned about side effects.¹⁰⁰

Some recommended practices for conversations about vaccine misinformation in clinical settings include asking open-ended questions, actively listening to patients without interrupting, empathizing with

⁹⁷ Statement received from AAP Nov. 17, 2023.

⁹⁸ Statement received from AAP Nov. 17, 2023.

⁹⁹ Statement received from AAP Nov. 17, 2023 (independent practitioner in Chapel Hill); *see also* Statement received from AAP Nov. 17, 2023 (private practitioner of twenty-two years in Atlanta) (“It has spilled over into flu vaccines and HPV[,] both non[-]mandatory vaccines.”).

¹⁰⁰ Brendan Nyhan & Jason Reifler, *Does Correcting Myths About the Flu Vaccine Work? An Experimental Evaluation of the Effects of Corrective Information*, 33 *Vaccine* 459, 461–63 (Jan. 2015), <https://bit.ly/3QFovC1>; *see also* Brendan Nyhan et al., *Effective Messages in Vaccine Promotion: A Randomized Trial*, 133 *Pediatrics* e835, e840 (2014) (similar conclusions as to combatting misinformation about MMR vaccine).

their concerns, exploring the patients' medical sources, explaining additional evidence the clinician can offer, identifying common ground, and planning to continue the conversation in the future.¹⁰¹ These conversations already require a meaningful investment of time, and require even more when clinicians follow these suggestions. One internist reports that “[i]t takes up a lot of * * * clinic time,” and that he “[o]ften * * * end[s] up going beyond 20 minutes of an office visit to counsel.”¹⁰² A pediatrician in Lexington, Kentucky with twenty-three years of experience reports spending approximately double the time counseling parents on vaccination than she did before COVID-19.¹⁰³ And a neonatologist practicing in Westchester County with twenty-three years of experience estimates that he spends one third of each prenatal consultation—or about two hours on an average work day—dedicated only to discussing COVID-19 immunization with reluctant families.¹⁰⁴

The internal medicine specialist who has been practicing in rural Alaska for twenty-five years reports that she has “spent time during every visit of [her] clinic day, totaling many hours each week, assessing vaccination status, counseling patients, discussing vaccine options, addressing vaccine questions, risks, benefits, state of the science, and countering misinformation.”¹⁰⁵ Despite some “limited success” in patient vaccination through these efforts, she has

¹⁰¹ Asha Shajahan & Irene V. Pasquetto, *Countering Medical Misinformation Online and in the Clinic*, 106 Am. Fam. Physician 124 (2022), <https://bit.ly/49EDMeZ>.

¹⁰² Statement received from ACP Nov. 17, 2023.

¹⁰³ Statement received from AAP Nov. 17, 2023.

¹⁰⁴ Statement received from AAP Nov. 17, 2023.

¹⁰⁵ Statement received from ACP Nov. 17, 2023.

“noticed a new distressing trend”: that “patients who previously agreed to be vaccinated are declining recommended boosters or updated vaccine doses,” because “they keep hearing that the vaccine is bad and they don’t want to get it.”¹⁰⁶ It appears that “the steady stream of misinformation through social channels is more convincing to [these] patients than is the science-based advice from their primary physician.”¹⁰⁷ It is therefore unsurprising that a recent AAP survey of pediatricians found that only 34% felt they had adequate time to address misinformation with patients and their families.¹⁰⁸ And even worse, as a pediatrician in Pennsylvania reports, “[m]ore often than not,” after discussing vaccine misinformation with parents, the parents “simply do not return until their child’s next physical in one year or skip it and are not seen for several years”¹⁰⁹—diminishing doctors’ ability to provide needed medical care outside of the vaccine context.

Repeatedly encountering patients who choose to put their health and the health of others at risk because of misinformation is also detrimental to healthcare providers’ morale, including that of *amic*’s members. One doctor founded #ThisIsOurShot, a digital campaign to promote the COVID-19 vaccine and combat misinformation, after witnessing a vaccination site be shut down by anti-vaccine protesters.¹¹⁰

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ Am. Acad. of Pediatrics, *Going PLACES*, *supra* n.93, at 2 fig. 1.

¹⁰⁹ Statement received from AAP Nov. 17, 2023.

¹¹⁰ Allyson Chiu, *‘If Not Us, Then Who?’ These Doctors and Nurses Battle Covid All Day. Then They Go Online and Fight Misinformation*, Wash. Post (Feb. 24, 2021), <https://bit.ly/4728kop>.

He has described his work as “never-ending,” such that “he can hardly find time to make himself dinner.”¹¹¹ Another doctor working on the campaign reported spending an extra forty hours a week on that project, in addition to her regular job.¹¹²

Moreover, as a result of efforts to encourage vaccine uptake, doctors have faced harassment in social media and in person, as well as calls to be fired.¹¹³ One study found that 64% of survey participants (comprising physicians, biomedical scientists, and trainees) reported harassment on social media related to comments about the COVID-19 pandemic, including death threats as a response to promoting COVID-19 vaccination.¹¹⁴ Unsurprisingly, an AAP survey of pediatricians focused on experiences in clinical settings found that 51% felt that hearing misinformation from patients and their families was a major source of stress.¹¹⁵ This is particularly concerning for public health, given projected physician shortages over the

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.*; see also Mohana Ravindranath, *Doctors Bring the Fight to Anti-Vaxxers Online*, Politico (Feb. 15, 2021, 4:31 AM), <https://bit.ly/3v7FNRe>; John Robert Bautista et al., *US Physicians’ and Nurses’ Motivations, Barriers, and Recommendations for Correcting Health Misinformation on Social Media: Qualitative Interview Study*, 7 JMIR Pub. Health & Surveillance, no. 9, e27715, at 6 (2021), <https://bit.ly/49GUVob>.

¹¹⁴ Regina Royan et al., *Physician and Biomedical Scientist Harassment on Social Media During the COVID-19 Pandemic*, 6 JAMA Network Open, no. 6, e2318315, at 3–4 (June 14, 2023), <https://bit.ly/41lsKHT>.

¹¹⁵ Am. Acad. of Pediatrics, *Going PLACES*, *supra* n.93, at 2 fig. 1.

coming years¹¹⁶ and reports that, due at least in part to “elevated levels of burnout * * * during COVID-19,” more than a quarter of healthcare professionals (and 24.3% of physicians) who responded to one survey stated an intent to leave their practice.¹¹⁷

The heartbreak doctors face in seeing misinformation claim the lives of their patients poses, in one North Texas pediatrician’s words, its own “moral injury.”¹¹⁸ He described a nine-year-old patient who (like the patient’s father) refused recommended COVID-19 vaccination. The child later contracted COVID-19, and a few days later, so did his father. The child recovered, but his father died. The child “was left wondering if he had killed his father by making him sick.” As the doctor explained, “[t]his family’s decision to not vaccinate was directly associated with the rumors, misinformation and agenda-driven disinformation that they were exposed to when the decision point of whether to vaccinate or not was present.” The doctor “could not overcome the influence and impact that the false information had on them.” The doctor concluded: “Even though I know I did everything I could, outcomes like this stay with me * * * *.”¹¹⁹

¹¹⁶ Andis Robeznieks, *Doctor Shortages Are Here—And They’ll Get Worse If We Don’t Act Fast*, Am. Med. Ass’n (Apr. 13, 2022), <https://bit.ly/4aq4bNV>.

¹¹⁷ Lisa S. Rotenstein et al., *The Association of Work Overload with Burnout and Intent to Leave the Job Across the Healthcare Workforce During COVID-19*, 38 J. Gen. Internal Med. 1920, 1922, 1926 (2023), <https://bit.ly/48maBfp>.

¹¹⁸ Statement received from AMA Nov. 29, 2023.

¹¹⁹ *Id.*

CONCLUSION

For the reasons explained above, should this Court address the question of whether petitioners' actions furthered a compelling interest, it should answer that question in the affirmative.

Respectfully submitted,

JESSICA ANNE MORTON
Counsel of Record

MARK B. SAMBURG

JEFFREY B. DUBNER

DEMOCRACY FORWARD
FOUNDATION

P.O. Box 34553

Washington, DC 20043

(202) 448-9090

jmorton@democracyforward.org

Counsel for Amici Curiae

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