
No. 21-3494

IN THE UNITED STATES COURT OF APPEALS FOR THE EIGHTH CIRCUIT

STATES OF MISSOURI, ARIZONA, MONTANA, NEBRASKA, ARKANSAS, IOWA, NORTH DAKOTA, SOUTH DAKOTA, ALASKA, NEW HAMPSHIRE, WYOMING, AAI, INC., DOOLITTLE TRAILER MANUFACTURING, INC., CHRISTIAN EMPLOYERS ALLIANCE, SIOUX FALLS CATHOLIC SCHOOLS D/B/A BISHOP O'GORMAN CATHOLIC SCHOOLS, AND HOME SCHOOL LEGAL DEFENSE ASSOCIATION, INC., Petitioners,

v.

JOSEPH R. BIDEN, Jr., et al., Respondents.

MOTION FOR STAY OF EMERGENCY TEMPORARY STANDARD PENDING JUDICIAL REVIEW AND FOR TEMPORARY ADMINISTRATIVE STAY

Appellate Case: 21-3494 Page: 1 Date Filed: 11/05/2021 Entry ID: 5095038

TABLE OF CONTENTS

INTRO	DUCTION	. 1
STAND	OARD OF REVIEW	.3
ARGUN	MENT	3
I.	The ETS Is Not Supported by Substantial Evidence in the Record	.4
	A. The ETS is a blatant <i>post hoc</i> rationalization for a standard dictated to the agency in advance	
	B. The ETS overlooks obvious distinctions and fails to consider important aspects of the problem	.6
II.	The ETS Exceeds OSHA's Statutory Authority and Violates the Constitution and Principles of Federalism	13
	A. Section 655 Does Not Authorize the Vaccine Mandate	14
	B. If Adopted, OSHA's Expansive Interpretation of Its Own Authority Would Be Unconstitutional on Numerous Grounds	
III.	The Balancing of Harms and the Public Interest Support a Stay	22
CONCL	LUSION	23

Appellate Case: 21-3494 Page: 2 Date Filed: 11/05/2021 Entry ID: 5095038

TABLE OF AUTHORITIES

Cases

Ala. Ass'n of Realtors v. Dep't of Health & Human Servs., 141 S. Ct. 2485 (2021) (per curiam	14, 17
Alfred L. Snapp & Son, Inc. v. Puerto Rico, ex rel., Barez, 458 U.S. 592 (1982)	4
Am. Dental Ass'n v. Martin, 984 F.2d 823 (7th Cir. 1993)	16
Asbestos Info. Ass'n/N. Am. v. Occupational Safety & Health Admin., 727 F.2d 415 (5th Cir. 1984)	3, 5, 6, 22
Bond v. United States, 572 U.S. 844 (2014)	21
Brady v. Nat'l Football League, 638 F.3d 1004 (8th Cir. 2011)	3
Dep't of Homeland Sec. v. Regents of the Univ. of California, 140 S. Ct. 1891 (2020)	6, 7, 9, 12
Dry Color Mfrs. Ass'n v. Dep't of Labor, 486 F.2d n.86	, 8, 11, 12
Elrod v. Burns, 427 U.S. 347 (1976)	22
Fla. Peach Growers Ass'n, Inc. v. U. S. Dep't of Labor, 489 F.2d 120 (5th Cir. 1974)	, 6, 13, 17
Forging Indus. Ass'n v. Sec'y of Lab., 773 F.2d 1436 (4th Cir. 1985)	14
Frank Diehl Farms v. Sec'y of Lab.,	15. 16

Gonzales v. Oregon, 546 U.S. 243 (2006)	15
Gundy v. United States, 139 S. Ct. 2116 (2019)	8, 19
Indus. Union Dep't, AFL-CIO v. Am. Petroleum Inst., 448 U.S. 607 (1980)	19
Jacobson v. Massachusetts, 197 U.S. 11 (1905)	4, 21
Kedroff v. St. Nicholas Cathedral of Russian Orthodox Church in N. Am., 344 U.S. 94 (1952)	12
KH Outdoor, LLC v. City of Trussville, 458 F.3d 1261 (11th Cir. 2006)	22
King v. Burwell, 576 U.S. 473 (2015)	18
Little Sisters of the Poor v. Pennsylvania, 140 S. Ct. 2367 (2020)	13
Lopez v. United States, 514 U.S. 549 (1995)	9, 20
Maryland v. King, 567 U.S. 1301 (2012)	22
Morrison v. Olson, 487 U.S. 654 (1988)	19
New York v. United States, 505 U.S. 1448 (1992	20
NFIB v. Sebelius, 567 U.S. 519 (2012)	19
Our Lady of Guadalupe Sch. v. Morrissey-Berru, 140 S. Ct. 2049 (2020)	12

Solid Waste Agency of N. Cook Cty. v. U.S. Army Corps of Engineers, 531 U.S. 159 (2001)	21
Taylor Diving & Salvage Co. v. U. S. Dep't of Lab., 599 F.2d 622 (5th Cir. 1979)	.6
United States v. X-Citement Video, Inc., 513 U.S. 64 (1994)	21
Util. Air Regul. Grp. v. EPA, 573 U.S. 302 (2014)	.8
Virginian Ry. Co. v. Sys. Fed'n No. 40, 300 U.S. 515 (1937)	22
Whitman v. Am. Trucking Ass'ns, 531 U.S. 457 (2001)	. 8
Zucht v. King, 260 U.S. 1746 (1922	21
Statutes	
29 U.S.C. § 651(a)	.5
29 U.S.C. § 651(b)	. 5
29 U.S.C. § 652(8)	8
29 U.S.C. § 655(c)	.4
29 U.S.C. § 655(c)(1)	5
29 U.S.C. § 655(f)	8
Rules	
Fed. R. App. P. 27 and 32	29
Regulations	
86 Fed. Reg. 61,402	20

Occupational Exposure to COVID-19; Emergency Temporary Standard, 86 Fed. Reg. 32,376 (Jun. 21, 2021)	16
Other Authorities	
Is OSHA Unconstitutional?,	
94 Va. L. Rev. 1407 (2008)	19

INTRODUCTION

Petitioners challenge OSHA's "Emergency Temporary Standard" that imposes a vaccine mandate on two-thirds of the U.S. workforce at a single stroke. OSHA lacks statutory authority to issue this mandate, and its decision to do so is unconstitutional. And OSHA studiously disregarded critical aspects of the problem. If not stayed, this ETS will cause economic pain and disruption to millions of working families. The Court should stay this unlawful action.

FACTUAL BACKGROUND

On September 9, 2021, President Biden announced his Path Out of the Pandemic: President Biden's COVID-19 Plan. Action at https://www.whitehouse.gov/covidplan/ (the "Plan"). The Plan states that "[t]he President's plan will reduce the number of unvaccinated Americans by using regulatory powers and other actions to substantially increase the number of Americans covered by vaccination requirements—these requirements will become dominant in the workplace." Id. The Plan announced that "[t]he Department of Labor's Occupational Safety and Health Administration (OSHA) is developing a rule that will require all employers with 100 or more employees to ensure their workforce is fully vaccinated or require any workers who remain unvaccinated to produce a negative test result on at least a weekly basis before coming to work. OSHA will issue an Emergency Temporary Standard (ETS) to implement this

requirement." Id.

The decision to implement this standard came from the White House, and OSHA had little prior notice. On September 10, 2021, the New York Times reported that OSHA "only learned about plans for the standard during roughly the past week, so current OSHA officials did not have a chance to prepare extensively before Mr. Biden's announcement." Michael D. Shear and Noam Scheiber, *Biden Tests Limits of Presidential Power in Pushing Vaccinations*, N.Y. TIMES (Sept. 10, 2021), *at* https://www.nytimes.com/2021/09/10/us/politics/biden-vaccines.html. "The White House is asking OSHA how fast they can do it, and OSHA said, "Who the hell knows?" said Jordan Barab, a deputy director of the agency under Mr. Obama. 'They only had a week's notice." *Id*.

Two months later, on November 5, 2021, OSHA published an "emergency temporary standard" (ETS). 86 Fed. Reg. 61,402 *et seq.* (Attachment A to the Petition for Review). The ETS adopts the same policy that the President dictated to OSHA in advance: it requires employers with 100 or more employees to require vaccination, or else require unvaccinated workers to undergo intrusive weekly testing (at their own expense). *See id.*

On November 5, 2021, the undersigned coalition of States and private employers ("Petitioners") filed their Petition for Judicial Review in this Court, challenging the validity of OSHA's ETS. The same day, Petitioners filed this motion

for stay of the standard pending judicial review. 29 U.S.C. § 655(f).

STANDARD OF REVIEW

Section 655(f) provides that "a stay of the [emergency temporary] standard" may be "ordered by the court." 29 U.S.C. 655(f). In considering whether to stay an ETS, courts consider: "(1) a substantial likelihood of success on the merits; (2) danger of irreparable harm if the court denies interim relief; (3) that other parties will not be harmed substantially if the court grants interim relief; and (4) that interim relief will not harm the public interest." *Asbestos Info. Ass 'n/N. Am. v. Occupational Safety & Health Admin.*, 727 F.2d 415, 418 & n.4 (5th Cir. 1984).

The Court may grant a temporary administrative stay "to give the court sufficient opportunity to consider the merits of the motion for a stay pending appeal." *Brady v. Nat'l Football League*, 638 F.3d 1004, 1005 (8th Cir. 2011); *see also Taylor Diving*, 537 F.2d at 820 n.4. The Court should grant one here.

ARGUMENT

Section 655(f) provides that "[a]ny person who may be adversely affected by a standard issued under this section may ... file a petition challenging the validity of such standard with the United States court of appeals for the circuit wherein such person resides or has his principal place of business, for a judicial review of such standard." 29 U.S.C. § 655(f).

Petitioners here are adversely affected by the ETS. Petitioners include States and private employers that employ more than 100 employees. The private employers are "adversely affected" by the ETS. See Exs. H-L. The States face sovereign and pocketbook injuries from the ETS, and each State sues as parens patriae on behalf of the "substantial segment of its population" that is adversely affected by the ETS. Alfred L. Snapp & Son, Inc. v. Puerto Rico, ex rel., Barez, 458 U.S. 592, 607-08 (1982). See Exs. A-G. In addition, several Petitioners are "State directly affected plan States" that under the OSH are https://www.osha.gov/stateplans/. See Exs. D, E, G.

I. The ETS Is Not Supported by Substantial Evidence in the Record.

Section 655(c) authorizes OSHA to issue an ETS only if it "determines (A) that employees are exposed to *grave danger* from exposure to substances or agents determined to be toxic or physically harmful or from new hazards, and (B) that such emergency standard is *necessary* to protect employees from such danger." 29 U.S.C. § 655(c)(1) (emphases added). "The key to the issuance of an emergency standard is the necessity to protect employees from a grave danger." *Fla. Peach Growers Ass'n, Inc. v. U. S. Dep't of Labor*, 489 F.2d 120, 124 (5th Cir. 1974).

The Court reviews OSHA's determinations to see if they are "supported by substantial evidence in the record considered as a whole." 29 U.S.C § 655(f). The "substantial evidence" standard is more "rigorous" than the APA's arbitrary-and-

F.2d 120, 127 (5th Cir. 1974). In reviewing an ETS, the Court "must take a 'harder look' at OSHA's action than we would if we were reviewing the action under the more deferential arbitrary and capricious standard applicable to agencies governed by the Administrative Procedure Act." *Asbestos Info. Ass'n/N. Am. v. Occupational Safety & Health Admin.*, 727 F.2d 415, 421 (5th Cir. 1984).

Courts have subjected OSHA's emergency temporary standards to particularly close scrutiny, because "[e]xtraordinary power is delivered to the Secretary under the emergency provisions of the Occupational Safety and Health Act. That power should be delicately exercised...." *Florida Peach Growers*, 489 F.2d at 129–30; *see also Asbestos Information Ass'n*, 727 F.2d at 422. Here, OSHA's exercise of that power was unlawful.

A. The ETS is a blatant *post hoc* rationalization for a standard dictated to the agency in advance.

First, the ETS is unlawful because OSHA did not first identify a "grave danger" to employees and then devise a standard "necessary" to protect them, as the statute requires. 29 U.S.C. § 655(c)(1). Instead, the White House dictated the standard to OSHA in advance, and then OSHA reverse-engineered an elaborate justification for that standard. The entire ETS is thus a quintessential "post hoc rationalization"—a justification invented afterward for a predetermined conclusion.

Here, "post hoc rationalizations cannot be accepted as basis for our review." Asbestos Information, 727 F.2d at 422; Dry Color Mfrs. Ass'n v. Dep't of Labor, 486 F.2d at 104 n.8 (same); Dep't of Homeland Sec. v. Regents of the Univ. of California, 140 S. Ct. 1891, 1907, 1909 (2020) (holding that it is a "foundational principle of administrative law" to reject an agency's "impermissible post hoc rationalizations"). An ETS is inherently suspect if "[n]o new data or discovery leads OSHA to invoke its extraordinary ETS powers." Asbestos Information, 727 F.2d at 418. Where pretextual considerations motivate the agency's action, the regulation cannot stand. Florida Peach Growers, 489 F.2d at 125-26; Asbestos Information, 727 F.2d at 426.

"OSHA should, of course, offer some explanation of its timing in promulgating an ETS, especially when, as here ... it has known of the serious health risk the regulated substance poses," yet took no action until the President's order. *Asbestos Information*, 727 F.2d at 423. Indeed, OSHA's attempt to provide such an explanation, *see* 86 Fed. Reg. 61,429-61,432, somehow fails to mention the President's order as an "Event[] Leading to the ETS." *Id.* OSHA's justification is a "post hoc rationalization" in its entirety. *Asbestos Information*, 727 F.2d at 422.

B. The ETS overlooks obvious distinctions and fails to consider important aspects of the problem.

In addition, the ETS fails overlooks "obvious distinctions ... that make certain regulations that are appropriate in one category of cases entirely unnecessary in another," *Dry Color*, 486 F.2d at 105, and because it "fail[s] to consider important

aspects of the problem." Regents of the Univ. of Calif., 140 S. Ct. at 1910 (quoting Motor Vehicle Manufacturers' Assn., 463 U.S. at 43).

1. No substantial evidence supports the ETS's finding of "grave danger" to workers with natural immunity from prior COVID-19 infection.

OSHA estimates that its mandate applies to 31.7 million unvaccinated workers. 86 Fed. Reg. 61,435. But it also estimates that at least 45 million Americans have natural immunity to COVID-19 from prior infection. *Id.* at 61,409. Thus, millions of employees subject to OSHA's mandate already have natural immunity to COVID-19. But the ETS does not exempt them; instead, OSHA finds a "grave danger" to unvaccinated workers with natural immunity—*i.e.*, those "previously infected with SARS-CoV-2." *See* 86 Fed. Reg. 61,421.

OSHA's finding of grave danger is insupportable by its own terms, because OSHA only finds (and only cites evidence) that the "previously infected" have a risk of "exposure to, and reinfection from, SARS-CoV-2," and only determines that previously infected are at higher risk in the aggregate than the vaccinated. *Id.* In its discussion, OSHA never finds that the previously infected on the whole face any "grave danger" of *severe health outcomes* from reinfection. *See id.* at 61,421-61,424. This contrasts sharply with its finding of "grave danger" to the unvaccinated without natural immunity, where OSHA openly states that "[t]his finding of grave

danger is based on the *severe health consequences* associated with exposure..." *Id.* at 61,403 (emphasis added).

OSHA's failure to find a grave danger of "severe health consequences," id., to those with natural immunity is unsurprising, because "[b]oth vaccine-mediated immunity and natural immunity after recovery from COVID infection provide extensive protection against severe disease from subsequent SARS-CoV-2 infection." Ex. M, Bhattacharya Decl. ¶ 8. "Multiple extensive, peer-reviewed studies comparing natural and vaccine immunity ... overwhelmingly conclude that natural immunity provides equivalent or greater protection against severe infection than immunity generated by mRNA vaccines (Pfizer and Moderna)." *Id.* ¶ 11. Though OSHA cites evidence of exposure and reinfection among the previously infected (which the vaccinated also experience, as OSHA concedes), see 86 Fed. Reg. 61,421-61,424, OSHA cites no substantial evidence of any "grave risk" of severe health outcomes to those with natural immunity. Dry Color, 486 F.2d at 104 (holding that "some possibility" of a severe health outcome is not a "grave danger"). Thus, no "substantial evidence in the record considered as a whole," 28 U.S.C. § 655(f), supports OSHA's determination, and its analysis overlooks an "obvious distinction" that underlies the entire ETS.

2. OSHA fails to give meaningful consideration to the threat of mass resignations and layoffs across all sectors of the American economy.

Another "important aspect of the problem," Regents, 140 S. Ct. at 1910 indeed, the elephant in the room—is the prospect of mass resignations and layoffs across all sectors of the American economy as a result of this mandate. OSHA estimates that its mandate affects "two-thirds of the nation's private-sector workforce," 86 Fed. Reg. 61.512, including 31.7 million unvaccinated workers, id. at 61,435. Just last week, the Kaiser Family Foundation published a wide-scale survey of workers in which 37 percent of unvaccinated employees said that they would leave their jobs rather than complying with a mandate that required vaccination or weekly testing (i.e., OSHA's mandate). Chris Isidore, et al., 72% of unvaccinated workers vow to quit if ordered to get vaccinated, CNN.com (Oct. 28, 2021), https://www.cnn.com/2021/10/28/business/covid-vaccine-workersquit/index.html. If those numbers hold, that means OSHA's mandate would result in 11.28 million American workers losing their jobs.

This number is staggering, and it foreshadows enormous pain and dislocation for millions of working families, widespread staffing shortages, small businesses in crisis, economic disruption, supply-chain chaos, and other problems. Yet OSHA's ETS gives scant consideration, at best, to these glaring risks of economic turmoil. Instead, OSHA paints a rosy picture for employers subject to the mandate, arguing that employers will "enjoy advantages" from the mandate—especially if they take the harsher option of mandating vaccines for all unvaccinated workers. 86 Fed. Reg.

61,437. But, under that harsher option, the Kaiser Family survey projects that 72 percent of unvaccinated workers would lose their jobs—which would result in 22.8 million people losing their jobs, inflicting even more economic turmoil and hardship on working families. Isidore, supra. Suffice to say, the real-world anticipation of actual employers contrasts sharply with OSHA's sunny optimism¹ on this point. See, e.g., Exs. H-L.

3. OSHA finds no "grave danger" to vaccinated workers, so its policy solely protects unvaccinated workers from risks they have voluntarily assumed.

President Biden aptly summarized the purpose of his policy: "The bottom line: We're going to protect *vaccinated* workers from unvaccinated co-workers." Joseph

¹ OSHA's only response to these risks is to argue that the survey data overestimates likely employee departures, and to assert (implausibly) that "it is very unlikely that this potential increase in employee turnover will exceed the ranges that industries have experienced over time." 86 Fed. Reg. 61,474. OSHA further asserts, optimistically, that "the number of employees who actually leave an employer is much lower than the number who claimed they might: 1% to 3% or less actually leave, compared to the 48-50% who claimed they would." Id. at 61,475. OSHA's analysis on this point, however, is facially unconvincing. First, OSHA never considers the costs to employees that are forced to leave their job by the mandate, considering "turnover" as strictly an employer-side problem. But ordinary workers are the ones harmed by this, because they will lose their jobs—workers who are disproportionately poor, and who may be ineligible for unemployment. Second, even from an employer-cost perspective, this is not ordinary employee "turnover" issue because the presence of the OSHA mandate necessarily closes off huge sections of the economy to individual employees who refuse to get the vaccine. Even if this is "only" 1-3% of the workforce—and it is almost certainly much more—that is potentially almost a million workers pushed out of the workforce entirely.

Biden, Remarks at the White House (Sept. 9, 2021)² ("Biden Speech") (emphasis added). But this statement makes no sense as a matter of science. "[V]accinated workers," *id.*, face no significant threat of severe health outcomes from COVID-19 infection, because the vaccines provide very robust protection against hospitalization and death. *See, e.g.,* 86 Fed. Reg. 61,409, 61,417. OSHA had no plausible basis to find a "grave danger" to vaccinated workers. *Dry Color*, 486 F.2d at 104.

OSHA, therefore, beat a strategic retreat from the President's stated rationale. OSHA's ETS repeatedly emphasizes that it is *not* finding a "grave danger" from COVID-19 to *vaccinated* workers. *See, e.g.,* 86 Fed. Reg. 61,417, 61,419 ("Fully vaccinated workers are not included in this grave danger finding...."). Instead, OSHA finds a "grave danger" solely to *unvaccinated* workers. *Id*.

This fundamental shift in rationale undermines the entire justification for the ETS. Vaccines have been free and available for many months, yet millions of workers—for reasons of their own—have chosen not to receive them. OSHA's mandate thus seeks to "protect" unvaccinated workers from *their own decision to forego vaccination*. The ETS, therefore, is fundamentally not about workplace safety, because all these unvaccinated workers have voluntarily assumed the risks that OSHA predicts.

https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/09/09/remarks-by-president-biden-on-fighting-the-covid-19-

pandemic-3/

Respecting the personal freedom and voluntary assumption of risks by millions of people is an "important aspect of the problem." *Regents*, 140 S. Ct. 1910. But OSHA fails to give any meaningful consideration to this important issue. Instead, OSHA speaks dismissively of Americans' fundamental preference for freedom and personal responsibility. *See* 86 Fed. Reg. 61,444 (dismissing the fact that many Americans "resist curbs on personal freedoms" as irrational "psychological resistance"). OSHA's federal bureaucrats may view America's love of "personal freedom[]" as mere "psychological resistance," *id.*, but millions of ordinary Americans do not.

4. The ETS gives no consideration to the religious-autonomy doctrine for religious employers.

The ETS includes no exemption for religious employers. This omission demonstrates that OSHA failed to consider less restrictive "alternative kinds of regulations," as it was required to do. *Dry Color*, 486 F.2d at 107. The ETS requires religious employers to remove from the workplace or take adverse action against employees—including ministerial employees—who decline vaccination or weekly testing. *See* Exs. K-L. This violates the religious-autonomy doctrine for religious employers, and it imposes "interference by secular authorities" in their hiring decisions, including of ministers. *Our Lady of Guadalupe Sch. v. Morrissey-Berru*, 140 S. Ct. 2049, 2061 (2020); *see also Kedroff v. St. Nicholas Cathedral of Russian Orthodox Church in N. Am.*, 344 U.S. 94, 116 (1952) (rejecting "secular control and

manipulation" of religious employers). This is another critical aspect of the problem that OSHA was required to consider. *Cf. Little Sisters of the Poor v. Pennsylvania*, 140 S. Ct. 2367, 2384 (2020). OSHA did not.

5. OSHA's long delay in promulgating the ETS undercuts its finding of "grave danger."

In addition, the long delay before imposing OSHA's "emergency" temporary standard undercuts OSHA's findings of "grave danger" and "necessity." As OSHA acknowledges, it refused to impose COVID-19 workplace requirements by ETS for over a year and a half, including during the eight months since vaccines were available. *See* 86 Fed. Reg. 61,429-61,431. OSHA only imposed this policy after it was instructed by the President to do so. And OSHA waited almost two months to issue its standard after the President directed it to do so. OSHA has also delayed implementing the ETS for another two months, until January 4. These repeated delays undercut OSHA's belated claim for extraordinary "emergency" powers here. *See Florida Peach Growers*, 489 F.2d at 125-26.

In sum, "Congress intended a carefully restricted use of the emergency temporary standard." *Florida Peach Growers*, 489 F.3d at 130 n.16. The substantial-evidence test was designed to prevent "arbitrary burdens imposed by a massive federal bureaucracy." *Id.* at 128. That is exactly what has occurred here.

II. The ETS Exceeds OSHA's Statutory Authority and Violates the Constitution and Principles of Federalism.

The Supreme Court has recognized that policies on compulsory vaccination lie within the police powers of the States, and that "[t]hey are matters that do not ordinarily concern the national government." *Jacobson v. Massachusetts*, 197 U.S. 11, 38 (1905). The ETS departs radically from this principle by purporting to impose a vaccine mandate on two-thirds of the U.S. workforce. In doing so, it exceeds OSHA's statutory authority, exceeds Congress's enumerated powers, violates the major-questions and non-delegation doctrines, and tramples on the States' traditional powers expressly reserved by the Tenth Amendment. Indeed, the "sheer scope of the ... claimed authority ... counsel[s] against" OSHA's assertion of statutory authority here. *Ala. Ass'n of Realtors v. Dep't of Health & Human Servs.*, 141 S. Ct. 2485, 2489 (2021) (per curiam).

A. Section 655 Does Not Authorize the Vaccine Mandate.

"OSHA's authority is limited to ameliorating conditions that exist in the workplace." *Forging Indus. Ass'n v. Sec'y of Lab.*, 773 F.2d 1436, 1442 (4th Cir. 1985) (en banc). This limitation is reflected in the OSH Act's plain language, which authorizes regulations only to address workplace-specific risks. Because the ETS seeks to ameliorate harms that are not workplace-related and instead addresses universal risks ubiquitous in society, it exceeds OSHA's authority.

The OSH Act's plain text makes clear that it focuses on hazards arising out of the workplace and on governing workplace conduct. For example, the key Congressional finding underlying the OSH Act is that "personal injuries and illnesses arising out of work situations impose a substantial burden." 29 U.S.C. § 651(a) (emphasis added). Similarly, the Act declares its purpose to be to "assure ... safe and healthful working conditions." 29 U.S.C. § 651(b) (emphasis added). And, most notably, OSHA is limited to imposing "occupational safety and health standard[s]," which are explicitly confined to regulations that are "reasonably necessary or appropriate to provide safe or healthful employment and places of employment." 29 U.S.C. § 652(8) (emphasis added).

Thus, OSHA's statutory authority is limited to ameliorating work-related hazards and must be limited to regulating *bona fide* working conditions. Indeed, "the conditions to be regulated must fairly be considered *working* conditions, the safety and health hazards to be remedied *occupational*, and the injuries to be avoided *work-related*." *Frank Diehl Farms v. Sec'y of Lab.*, 696 F.2d 1325, 1331-32 (11th Cir. 1983) (emphases added) (holding that "[m]igrant housing may well be unsafe and unhealthy, conditions that we deplore," but lie outside OSHA's authority). OSHA admits that "COVID-19 is not a uniquely work-related hazard," and "not exclusively an occupational disease." 86 Fed. Reg. 61,407, 61,411. Given the virus's ubiquity, these admissions "test[] the limits of understatement." *Gonzales v. Oregon*, 546 U.S. 243, 286 (2006) (Scalia, J., dissenting).

COVID-19 is not uniquely—or even primarily—a work-related risk. Indeed, the virus is ubiquitous and poses risks *throughout society*, including the workplace—like virtually all other places in the U.S. The ETS regulates workers' private medical procedures to address risks encountered largely outside the workplace—or at least equally within and without the workplace. The ETS is not an adoption of "practices, means, methods, operations, or processes" at the workplace. 29 U.S.C. § 652(8).

Though worker vaccination rates may tangentially affect working conditions, this does not mean that the Vaccine Mandate qualifies as an "occupational safety and health standard" under Section 652(8). *Id.* On such an expansive understanding, OSHA could regulate anything which affects or improves working conditions, no matter how remote from the workplace—such as requiring workers to eat more broccoli, or mandating that vaccinated workers receive a higher minimum wage than the unvaccinated. But that is not the law; OSHA's mandate is more limited. And as courts have recognized, OSHA cannot exceed its mandate even for the ostensible benefit of workers. See, e.g., Frank Diehl Farms, 696 F.2d at 1391; Taylor Diving & Salvage Co. v. U. S. Dep't of Lab., 599 F.2d 622, 625 (5th Cir. 1979). Accordingly, even when regulating contagious disease in the past, OSHA has not attempted to mandate vaccination. See, e.g., Am. Dental Ass'n v. Martin, 984 F.2d 823, 825 (7th Cir. 1993) (upholding bloodborne pathogens rule, but observing that it did not require vaccination); Occupational Exposure to COVID-19; Emergency

Temporary Standard, 86 Fed. Reg. 32,376 (Jun. 21, 2021) (encouraging, but not requiring, vaccination among healthcare workers).

In the ETS, OSHA repeatedly complains that it would be too "challenging" and "complicated" for OSHA to adopt a "comprehensive and multi-layered standard" that would actually address workplace safety in an industry-specific fashion. *See, e.g.*, 86 Fed. Reg. 61,434; *id.* at 61,437-38. Instead, OSHA opts to regulate two-thirds of the entire U.S. workforce at one stroke. But "our system does not permit agencies to act unlawfully even in pursuit of desirable ends." *Ala. Ass'n of Realtors*, 141 S. Ct. at 2490. The statute was not designed to make it convenient for OSHA to dictate economy-wide public health policies; rather it was designed to protect against "arbitrary burdens imposed by a massive federal bureaucracy." *Florida Peach Growers*, 489 F.3d at 128.

"It would be one thing if Congress had specifically authorized the action that [OSHA has] taken. But that has not happened." *Ala. Ass'n of Realtors*, 141 S. Ct. at 2486.

B. If Adopted, OSHA's Expansive Interpretation of Its Own Authority Would Be Unconstitutional on Numerous Grounds.

For similar reasons, if OSHA's sweeping interpretation of its own authority were upheld, the statute would be unconstitutional on numerous grounds. The Court should follow the Supreme Court's clear-statement rules to prevent this outcome.

The phrase "occupational safety and health standard" in 29 U.S.C. § 652(8), fails to provide any clear mandate for OSHA's extraordinary action here.

First, OSHA's interpretation violates the Supreme Court's major-questions doctrine. Congress does not "hide elephants in mouseholes." Whitman v. Am. Trucking Ass'ns, 531 U.S. 457, 468 (2001). For "a question of deep 'economic and political significance' ... had Congress wished to assign that question to an agency, it surely would have done so expressly." King v. Burwell, 576 U.S. 473, 485 (2015). "When an agency claims to discover in a long-extant statute an unheralded power to regulate a significant portion of the American economy, ... [courts] typically greet its announcement with a measure of skepticism." Util. Air Regul. Grp. v. EPA, 573 U.S. 302, 324 (2014). So also here. The OSH Act's plain language, focused on workplace safety, does not confer authority on OSHA to federalize public-health policies. The statute is focused on workplace hazards and work conditions. The ETS governs neither. Instead, it advances the President's overarching policy goal to increase the number of vaccinated Americans by whatever form of government compulsion is available. See Biden Speech, supra.

Second, OSHA's interpretation of its own authority, if upheld, would violate nondelegation requirements. The nondelegation doctrine bars Congress from transferring its legislative power to another branch of Government. See Gundy v. United States, 139 S. Ct. 2116, 2121 (2019) (plurality op.). Congress must provide

an "intelligible principle to guide the delegee's use of discretion" in the exercise of delegated power. *Id.* at 2123. Courts and scholars have long been concerned that the OSH Act's language, read broadly, raises grave nondelegation concerns. *See* Cass R. Sunstein, *Is OSHA Unconstitutional?* 94 Va. L. Rev. 1407 (2008). A plurality of Justices in the *Benzene* case recognized that a maximalist reading of OSHA's broad mandate could give it "unprecedented power over American industry." *See Indus. Union Dep't, AFL-CIO v. Am. Petroleum Inst.*, 448 U.S. 607, 645 (1980) (Stevens, J.) (plurality op.) ("*Benzene*"). To avoid nondelegation concerns, the *Benzene* Court read OSHA's authority narrowly. *Id.* at 652. Until now, OSHA has largely avoided interpretations of its own authority that would test the limits of this doctrine. No longer: "this wolf comes as a wolf." *Morrison v. Olson*, 487 U.S. 654, 699 (1988) (Scalia, J., dissenting).

Third, on OSHA's interpretation, the statute exceeds Congress's authority under the Commerce Clause. Just as the federal government cannot mandate the purchase of health insurance, it cannot mandate vaccination. NFIB v. Sebelius, 567 U.S. 519, 548-559 (2012) (holding that Congress lacked authority under the commerce power to mandate the purchase of health insurance). The personal decision whether to get vaccinated, like "[t]he possession of a gun in a local school zone" is "in no sense an economic activity." Lopez v. United States, 514 U.S. 549, 567 (1995). Deeming every American's personal choice whether to vaccinate as

"interstate commerce" would "convert congressional authority under the Commerce Clause to a general police power of the sort retained by the States." *Id*.

Further, "Congress does not casually authorize administrative agencies to interpret a statute to push the limit of congressional authority." *Solid Waste Agency of N. Cook Cty. v. U.S. Army Corps of Engineers*, 531 U.S. 159, 172-73 (2001) (citations omitted). "Where an administrative interpretation of a statute invokes the outer limits of Congress' power, we expect a clear indication that Congress intended that result." *Id.* at 172. Again, no such clear indication exists here.

Fourth, the ETS violates the Tenth Amendment by trampling on the traditional authority of the States to regulate public health within their borders, including on the topic of mandatory vaccines. President Biden vowed that, if States adopt policies favoring personal freedom in this area, he would "get them out of the way." Biden Speech, *supra*. Likewise, OSHA's ETS repeatedly announces that it preempts state and local policies to the contrary. *See* 86 Fed. Reg. 61,437, 61,440, 61,505.

But the Constitution does not allow the President to "get [States] out of the way" whenever he deems them inconvenient. Rather, it "leaves to the several States a residuary and inviolable sovereignty, reserved explicitly to the States by the Tenth Amendment." *New York v. United States*, 505 U.S. 144, 188 (1992) (cleaned up). "[T]he police power of a state" includes, above all, the authority to adopt regulations

seeking to "protect the public health," including the topic of mandatory vaccination. Jacobson, 197 U.S. at 24–25; see also Zucht v. King, 260 U.S. 174, 176 (1922). The States "did not surrender" these powers "when becoming . . . member[s] of the Union." Jacobson, 197 U.S. at 25. "The safety and the health of the people . . . are, in the first instance, for [the States] to guard and protect." Id. at 38. These matters "do not ordinarily concern the national government." Id.

So also, where (as here) the federal government alters the federal-state framework by displacing the States' traditional authority over public health within their borders, the Court should "insist on a clear indication that Congress meant to reach" such a result "before interpreting the statute's expansive language in a way that intrudes on the police power of the States." *Bond v. United States*, 572 U.S. 844, 860 (2014); *see also SWANCC*, 531 U.S. at 172 ("This concern is heightened where the administrative interpretation alters the federal-state framework by permitting federal encroachment upon a traditional state power."). OSHA's ETS would require an extremely "clear statement from Congress," *Bond*, 572 U.S. at 857—which the OSH Act does not contain.

Fifth, for all the foregoing reasons, the doctrine of constitutional avoidance requires rejecting OSHA's interpretation. United States v. X-Citement Video, Inc., 513 U.S. 64, 78 (1994).

III. The Balancing of Harms and the Public Interest Support a Stay.

Given Petitioners' overwhelming likelihood of success on the merits, the other three equitable factors also decisively favor a stay. *See Asbestos Information*, 727 F.2d at 418 & n.4. Here, the "danger of irreparable harm" to Petitioners, *id.*, is clear. The States face immediate intrusions on their sovereignty that impose *per se* irreparable harm. *See Maryland v. King*, 567 U.S. 1301, 1303 (2012) (Roberts, C.J.). The private employers face a vast array of economic, religious, and other injuries for which the law will provide no remedy. *See* Exs. H-L. And the ETS forces millions into a Hobson's choice between losing their jobs and subjecting themselves to OSHA's unlawful diktat, which constitutes irreparable injury of the first order. *See Elrod v. Burns*, 427 U.S. 347, 373 (1976) (holding that the loss of similar "freedoms, for even minimal periods of time, unquestionably constitutes irreparable injury").

On the flip side, the Government will suffer no injury from a stay because it has no cognizable interest in maintaining an unlawful mandate. *KH Outdoor, LLC v. City of Trussville*, 458 F.3d 1261, 1272 (11th Cir. 2006) (holding that the government "has no legitimate interest in enforcing an unconstitutional ordinance"). Likewise, "[t]he public has no interest in enforcing an unconstitutional" policy. *Id.* And the public interest always favors compelling the Government to comply with federal statutes, such as the OSH Act's provisions at issue here. *See Virginian Ry.*

Co. v. Sys. Fed'n No. 40, 300 U.S. 515, 552 (1937) (a duly enacted statute "is in itself a declaration of public interest and policy").

CONCLUSION

This Court should stay OSHA's ETS pending judicial review. The Court should also grant a temporary administrative stay pending consideration of this stay motion, and order expediting briefing on the stay motion.

Dated: November 5, 2021 Respectfully submitted,

ERIC S. SCHMITT
Attorney General of Missouri

/s/ D. John Sauer
D. John Sauer, #58721MO
Solicitor General
Jesus A. Osete
Michael E. Talent
Office of the Attorney General
Supreme Court Building
207 W. High St.
P.O. Box 899
Jefferson City, MO 65102
Tel. (573) 751-8870
Fax (573) 751-0774
John.Sauer@ago.mo.gov

Counsel for Petitioners

Additional Counsel:

MARK BRNOVICH

Arizona Attorney General

/s/ Drew C. Ensign

Drew Ensign

Deputy Solicitor General

Arizona Attorney General's Office
2005 N. Central Ave.

Phoenix, AZ 85004

(602) 542-3333

Drew.ensign@azag.gov

Counsel for State of Arizona

AUSTIN KNUDSEN

Attorney General of Montana KRISTIN HANSEN Lieutenant General /s/ David M.S. Dewhirst DAVID M.S. DEWHIRST Solicitor General CHRISTIAN B. CORRIGAN Assistant Solicitor General Office of the Attorney General 215 North Sanders P.O. Box 201401 Helena, MT 59620-1401 406-444-2026 David.Dewhirst@mt.gov Christian.Corrigan@mt.gov Counsel for State of Montana

DOUGLAS J. PETERSON

Attorney General of Nebraska

/s/ James A. Campbell

James A. Campbell

Solicitor General

Office of the Nebraska Attorney General
2115 State Capitol

Lincoln, Nebraska 68509

(402) 471-2682

jim.campbell@nebraska.gov

Counsel for State of Nebraska

LESLIE RUTLEDGE

Arkansas Attorney General

/s/ Nicholas J. Bronni
Nicholas J. Bronni
Solicitor General
Vincent M. Wagner
Deputy Solicitor General
Office of the Arkansas Attorney General
323 Center Street, Suite 200
Little Rock, Arkansas 72201
(501) 682-8090
Nicholas.bronni@arkansasag.gov
Counsel for State of Arkansas

JEFFREY S. THOMPSON

Solicitor General

/s/ Samuel P. Langholz

SAMUEL P. LANGHOLZ

Assistant Solicitor General

Office of the Iowa Attorney General
1305 E. Walnut Street

Des Moines, Iowa 50319

(515) 281-5164

jeffrey.thompson@ag.iowa.gov

sam.langholz@ag.iowa.gov

Counsel for State of Iowa

WAYNE STENEHJEM

Attorney General of North Dakota /s/ Matthew A. Sagsveen
Matthew A. Sagsveen
Solicitor General
State Bar ID No. 05613
Office of Attorney General
500 North 9th Street
Bismarck, ND 58501-4509
Telephone (701) 328-3640
Facsimile (701) 328-4300
masagsve@nd.gov

JASON R. RAVNSBORG

South Dakota Attorney General /s/ David M. McVey
David M. McVey
Assistant Attorney General
1302 E. Highway 14, Suite 1
Pierre, SD 57501-8501
Phone: 605-773-3215

E-Mail: david.mcvey@state.sd.us Counsel for State of South Dakota

TREG R. TAYLOR

Attorney General of Alaska

/s/ Charles E. Brasington
Charles E. Brasington
Assistant Attorney General
State of Alaska
1031 West Fourth Avenue, Suite 200
Anchorage, AK 99501
(907) 269-6612
charles.brasington@alaska.gov
Counsel for State of Alaska

JOHN M. FORMELLA

New Hampshire Attorney General

/s/ Anthony J. Galdieri

Anthony J. Galdieri

Solicitor General

Counsel of Record

NEW HAMPSHIRE DEPARTMENT OF JUSTICE

33 Capitol Street

Concord, NH 03301

Tel: (603) 271-3658

Anthony.J.Galdieri@doj.nh.gov

Counsel for State of New Hampshire

BRIDGET HILL

Wyoming Attorney General

/s/ Ryan Schelhaas

Ryan Schelhaas

Chief Deputy Attorney General

Wyoming Attorney General's Office

109 State Capitol

Cheyenne, WY 82002

Telephone: (307) 777-5786

ryan.schelhaas@wyo.gov

Attorneys for the State of Wyoming

AAI, Inc.

/s/ Jefferson Downing

Jefferson Downing

Keating, O'Gara, Nedved & Peter, PC, LLO

P.O. Box 82248

Lincoln, Nebraska 68501

(402) 475-8230

id@keatinglaw.com

Counsel for AAI, Inc.

Doolittle Trailer Manufacturing, Inc.

/s/ Matthew W. Murphy
Matthew W. Murphy, MO47786
Vessell Bridges Murphy Law Offices
3901 S. Providence Road, Suite D
Columbia, Missouri 65203
(573) 777-4488
matt@vbmlaw.com
Counsel for Doolittle Trailer Mfg., Inc.

Christian Employers Alliance Sioux Falls Catholic Schools d/b/a Bishop O'Gorman Catholic Schools Home School Legal Defense Association, Inc.

/s/ Ryan L. Bangert
David A. Cortman
John J. Bursch*
Ryan L. Bangert*
Matthew S. Bowman
440 First Street, NW, Suite 600
Washington, D.C. 20001

Telephone: (202) 393-8690
Facsimile: (202) 347-3622
dcortman@adflegal.org
jbursch@adflegal.org
rbangert@adflegal.org
mbowman@adflegal.org

*admitted to Eighth Circuit; not licensed in D.C.

Counsel for Christian Employers Alliance, Sioux Falls Catholic Schools d/b/a Bishop O'Gorman Catholic Schools, and Home School Legal Defense Association, Inc.

CERTIFICATE OF COMPLIANCE

The undersigned hereby certifies that this motion complies with the typeface and formatting requirements of Fed. R. App. P. 27 and 32, and that it contains 5,193 words as determined by the word-count feature of Microsoft Word.

/s/ D. John Sauer

CERTIFICATE OF SERVICE

I hereby certify that on November 5, 2021, I electronically filed the foregoing, along with the accompanying unsealed appendix, with the Clerk of the Court for the United States Court of Appeals for the Eight Circuit by using the CM/ECF system.

Participants in the case who are registered CM/ECF users will be served by the CM/ECF system, and I will serve a copy of the foregoing on all participants in the case who are not registered CM/ECF users by mailing a copy of the same, first-class, postage paid, to the address listed on the Court's CM/ECF system. In addition, I have sent a true and correct electronic copy of the foregoing with all Exhibits to: zzSOL-Covid19-ETS@dol.gov.

/s/ D. John Sauer

AFFIDAVIT OF SPENCER A. CLARK, ACTING DIRECTOR MISSOURI DIVISION OF EMPLOYMENT SECURITY

I, <u>Spencer A. Clark</u>, being first duly sworn upon my oath, do hereby state as follows:

- 1. I am the Acting Director of the Missouri Division of Employment Security (DES) within the Missouri Department of Labor and Industrial Relations (DOLIR). I am also a resident of Missouri and over the age of majority. I have personal knowledge of the facts in this declaration, and those facts are true and correct to the best of my knowledge.
- 2. In the performance of its statutory duties, DES collects wage data about employment in the State of Missouri.
- 3. According to the data collected by DES, there are at least 3,443 private employers with more than 100 employees in the State of Missouri.
- 4. Additionally, data provided to DES by the Missouri Economic Research and Information Center (MERIC) within the Department of Higher Education and Workforce Development, shows that of the 2,686,189 total employees in Missouri, 1,289,588 work for employers with at least 100 employees.

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

FURTHER AFFIANT SAYETH NOT.

DATED this 13th day of October, 2021.

Spencer A. Clark Acting Director,

Missouri Division of Employment Security

Subscribed and sworn to before me this 13th day of Cotoher

,2021

My Commissions expires:



GLORIA J. STEGEMANN My Commission Expires October 1, 2022 Osage County Commission #97483218

IN THE UNITED STATES COURT OF APPEALS FOR EIGHTH CIRCUIT

STATE OF MISSOURI, et al.,	
Petitioners,	
v.	
UNITED STATES DEPARTMENT OF LABOR, et al.,	Case No
Respondents.	

Declaration of John Albin, Commissioner of the Nebraska Department of Labor

- 1. My name is John Albin, and I am Commissioner of the Nebraska Department of Labor (NDOL). I am also a resident of Nebraska and over the age of majority. I have personal knowledge of the facts in this declaration, and those facts are true and correct to the best of my knowledge.
- 2. The staff at the NDOL maintains statistics about employment in the State of Nebraska.
- 3. Nebraska has a total population of approximately 1.962 million people.
- 4. According to the latest statistics available to NDOL, a total of 948,390 employees are employed in the State of Nebraska.
- 5. Of those 948,390 employees, 415,632 of them work for large private companies with at least 100 employees.

6. This means that 43.8% of the Nebraska workforce and 21.2% of the Nebraska population are employed by large private companies with at least 100 employees.

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

Executed on this day of October 2021.

John Albin Commissioner

Nebraska Department of Labor

IN THE UNITED STATES COURT OF APPEALS FOR EIGHTH CIRCUIT

STATE OF MISSOURI, et al.,	×
Petitioners,	
v .	Case No
UNITED STATES DEPARTMENT OF LABOR, et al.,	AFFIDAVIT OF BARBARA WAGNER
Respondents.	ų.

- I, Barbara Wagner, state the following:
 - I am a citizen of the United States, over 18 years of age, a resident of Lewis & Clark County, Montana, and employed by the Montana Department of Labor & Industry (DLI) as Chief Economist.
 - 2. In my position, I am responsible for collecting, maintaining, and analyzing economic information regarding Montana's workforce.
 - 3. Montana has a total population of 1,084,225 according to the 2020 Decennial Census.
 - 4. According to the average over the last year of available statistics, 382,138 people in Montana are employed in private-sector payroll jobs in Montana and reported to Unemployment Insurance.
 - 5. Of those employees, 142,869 employees are employed by businesses which employ more than 100 employees. This constitutes approximately 37.4% of Montana private-sector payroll employees and 13.2% of all Montana residents.

Further affiant sayeth naught.

Barbara Wagner

State of Montana

County of Lewis and Clark

This instrument was signed or acknowledged before me on the 13 day of

October, 2021 by B

_, 2021 by <u>Barbara Wagner</u>

Seal

SANDRA J. MOISEY SCHERER
NOTARY PUBLIC for the
State of Montana
Residing at East Helena, Montana
My Commission Expires
July 27, 2025

IN THE UNITED STATES COURT OF APPEALS FOR THE EIGHTH CIRCUIT

STATE OF MISSOURI et al.,	Case No
Petitioners,	
v.	DECLARATION OF
JOSEPH R. BIDEN, JR., et al.,	ROD ROBERTS
Respondents.	

- I, Rod Roberts, declare under penalty of perjury that I have personal knowledge of the following:
 - 1. I am a resident of Iowa and over the age of majority.
- 2. I serve as the Iowa Labor Commissioner, an officer of the State of Iowa appointed by Iowa Governor Kim Reynolds and confirmed by the Iowa Senate. My duties as Labor Commissioner include leading the Division of Labor and administering Iowa's Occupational Safety and Health program under chapter 88 of the Iowa Code.
- 3. The State of Iowa has an approved state plan under section 18 of the Occupational Safety and Health Act of 1970. Our plan was initially approved in 1973 and given final approval by the United States Department of Labor in 1985. The attached Exhibit "A" is a true and accurate copy of the Certificate of Final State Plan Approval.
- 4. Under Iowa's state plan, the Division of Labor is responsible for enforcing workplace safety and health standards, with limited exceptions, for

Appellate Case: 21-3494 Page: 1 Date Filed: 11/05/2021 Entry ID: 5095038

employers throughout Iowa. The State of Iowa and other state and local government employers are covered by these standards.

- 5. The Iowa Division of Labor receives an annual matching federal grant to support its operations under the state plan. For the most recent federal fiscal year starting on October 1, 2021, the federal base award was \$2,206,100.
- 6. On November 4, 2021, the Occupational Safety and Health Administration ("OSHA") filed its COVID-19 Vaccination and Testing Emergency Temporary Standard with the Office of the Federal Register that will be published in the Federal Register on November 5, 2021.
- 7. If this emergency temporary standard is not stayed, federal regulations (29 C.F.R. § 1953.5(b)) require the State of Iowa to adopt the standard within 30 days or demonstrate that the standard is unnecessary because the State of Iowa's standard is already at least as effective as the emergency temporary standard. If the State of Iowa adopts the emergency temporary standard, the Division of Labor would be required to enforce it against all covered employers, including the State of Iowa.
- 8. The State is required to provide federal OSHA with notice of the actions it will take within 15 days of receiving notice of the standard.
- 9. OSHA has already notified three other States with state plans that it is initiating reconsideration proceedings to propose revoking their state plans because they did not adopt an emergency temporary standard issued in June 2021 that applied only to healthcare employers. The attached exhibits "B", "C", and "D" are copies of the letters from OSHA to Arizona, South Carolina, and Utah, respectively.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on November 4, 2021.

ROD ROBERTS

Iowa Labor Commissioner



Certificate of Final State Plan Approval

awarded by

The Occupational Safety and Realth Administration

In accordance will the provisions of the Occupational Enfaty and Health Thet of Mineteen Hundred and Essanty, a determination has been made, pursuant to Esection Cighteen thereof, that the

Occupational Safety and Health Program

of the

Bureau of Labor State of Towa

In actual operation is providing for the development and enforcement of standards applicable to employers and employees, within its boundaries, in a manner at least as affective as the program of the Tederal Occupational Safety and Hoolth Moninistration.

To Tecurdance will this determination, final approval of the State's Occupational Safety and Health Than has been greated, and willority for concurrent Toderal enforcement in those issues covered by the State's plan is thereby relinquished.

State State

_ Solu / A Kon Yand Thisteent Exercises of Lieber

Appellate Case: 21-3494 Page: 4 Date Filed: 11/05/2021 Entry ID: 5095038

Occupational Safety and Health Administration Washington, D.C. 20210



October 19, 2021

James Ashley Director Industrial Commission of Arizona 800 W. Washington St. Phoenix, AZ 85007

Dear Director Ashley:

This letter is to inform you that, based on its continued evaluations of the Arizona State Plan, the Occupational Safety and Health Administration (OSHA) is reconsidering its decision granting the Arizona State Plan's affirmative Section 18(e) determination, otherwise known as final approval. Accordingly, OSHA will be initiating reconsideration proceedings with a proposal to revoke Arizona's final approval, during which time any interested persons will be given an opportunity to provide OSHA with reasons why the proposed revocation should not be finalized.

Arizona was granted final approval on June 20, 1985, and as such, was thereafter bound by the requirements of being a State Plan, as set forth in Title 29 of the Code of Federal Regulations, Section 1902.32(e), which provides:

Once a State's plan, or any modification thereof, has been given an affirmative 18(e) determination, the State is required to maintain a program which will meet the requirements of section 18(c) [of the Occupational Safety and Health Act (OSH Act)] and will continue to be "at least as effective as" the Federal program operations in the issues covered by the determination. As the Federal program changes and thereby becomes more effective, the State is correspondingly required to adjust its program at a level which would provide a program for workplace safety and health which would be "at least as effective as" the improvements in the Federal program. A failure to comply with this requirement may result in the revocation of the affirmative 18(e) [final approval] determination and the resumption of Federal enforcement and standards authority and/or in the commencement of proceedings for the withdrawal of approval of the plan, or any portion thereof, pursuant to 29 CFR part 1955.

As a result of Arizona's continued failure to adopt a COVID-19 Healthcare Emergency Temporary Standard (Healthcare ETS), the Arizona State Plan is less effective than the Federal program. Moreover, Arizona failed to meet any of its required regulatory timeframes with respect to adoption of OSHA's Healthcare ETS, including failing to notify OSHA of the action it intended to take within 15 days of promulgation (by July 6, 2021) and failing to adopt the Healthcare ETS or an "at least as effective" alternative within 30 days of promulgation (by July

Appellate Case: 21-3494 Page: 5 Date Filed: 11/05/2021 Entry ID: 5095038

21, 2021), without providing any reasoned basis for these failures. OSHA has serious concerns about the Arizona State Plan's overall ability to maintain an "at least as effective" safety and health program.

Arizona's ongoing failure to adopt the Healthcare ETS is continuously placing healthcare workers at risk as they are deprived of "at least as effective" protections against the grave danger from the hazard of workplace exposures to SARS-CoV-2 (the virus that causes COVID-19). And at this time, OSHA's concerns about the Arizona State Plan are serious enough that it believes action is necessary under the OSH Act to ensure workers throughout the State receive workplace protections that are "at least as effective" as those provided by OSHA. Accordingly, OSHA will be publishing a Federal Register Notice announcing its intent to reconsider Arizona's final approval status, and the reasons supporting its proposal to revoke Arizona's final approval. No later than 10 days following the publication of this Federal Register Notice, Arizona is required to publish reasonable notice within the State containing the same information. 29 CFR § 1902.49(a). A docket will be opened for public comment, at which time any interested persons will be afforded an opportunity to submit comment as to whether OSHA should finalize its proposed revocation. 29 CFR § 1902.49(c). OSHA will consider all the relevant information that has been submitted before making a final decision on the continuation or revocation of Arizona's final approval. 29 CFR § 1902.52(a). If OSHA finalizes its proposed revocation, concurrent Federal enforcement and standards authority will be reinstated in Arizona. 29 CFR § 1902.53(b). The extent to which Federal OSHA may decide to reassert Federal enforcement activities throughout the State will be dependent, in part, on Arizona's response to these proceedings.

We very much value the partnership OSHA has with its State Plan partners, including Arizona, and we would like to continue to work cooperatively on all issues impacting worker safety and health. However, OSHA is taking action at this time due to its obligation under the OSH Act to ensure that State Plans are "at least as effective" as the Federal program. If you have any questions about this process, please let me know.

Thank you for your attention and prompt response to this serious matter.

Sincerely,

James S. Frederick

Acting Assistant Secretary

¹ The Arizona Division of Occupational Safety and Health (ADOSH) responded on July 16, 2021, after the 15 day timeframe, with a proposal to adopt only portions of OSHA's Healthcare ETS, while relying on existing state law to cover the remaining issues. OSHA had several conversations with ADOSH about its intent to rely on existing state law to cover certain issues and came to a mutual understanding that this proposal would not be "at least as effective" as OSHA's provisions in the ETS. OSHA sent a letter to ADOSH on September 16, 2021, memorializing this understanding. Meanwhile, ADOSH never took action to adopt the other provisions of OSHA's Healthcare ETS.

Exhibit C

U.S. Department of Labor

Occupational Safety and Health Administration Washington, D.C. 20210



October 19, 2021

Emily H. Farr, Director South Carolina Department of Labor, Licensing and Regulation Synergy Business Park, Kingstree Building 110 Centerview Dr. Columbia, SC 29210

Dear Director Farr:

This letter is to inform you that, based on its continued evaluations of the South Carolina State Plan, the Occupational Safety and Health Administration (OSHA) is reconsidering its decision granting the South Carolina State Plan's affirmative Section 18(e) determination, otherwise known as final approval. Accordingly, OSHA will be initiating reconsideration proceedings with a proposal to revoke South Carolina's final approval, during which time any interested persons will be given an opportunity to provide OSHA with reasons why the proposed revocation should not be finalized.

South Carolina was granted final approval on December 18, 1987, and as such, was thereafter bound by the requirements of being a State Plan, as set forth in Title 29 of the Code of Federal Regulations, Section 1902.32(e), which provides:

Once a State's plan, or any modification thereof, has been given an affirmative 18(e) determination, the State is required to maintain a program which will meet the requirements of section 18(c) [of the Occupational Safety and Health Act (OSH Act)] and will continue to be "at least as effective as" the Federal program operations in the issues covered by the determination. As the Federal program changes and thereby becomes more effective, the State is correspondingly required to adjust its program at a level which would provide a program for workplace safety and health which would be "at least as effective as" the improvements in the Federal program. A failure to comply with this requirement may result in the revocation of the affirmative 18(e) [final approval] determination and the resumption of Federal enforcement and standards authority and/or in the commencement of proceedings for the withdrawal of approval of the plan, or any portion thereof, pursuant to 29 CFR part 1955.

As a result of South Carolina's continued failure to adopt a COVID-19 Healthcare Emergency Temporary Standard (Healthcare ETS), the South Carolina State Plan is less effective than the Federal program. Moreover, South Carolina failed to meet any of its required regulatory timeframes with respect to adoption of OSHA's Healthcare ETS, including failing to notify OSHA of the action it intended to take within 15 days of promulgation (by July 6, 2021) and failing to adopt the Healthcare ETS or an "at least as effective" alternative within 30 days of

Appellate Case: 21-3494 Page: 7 Date Filed: 11/05/2021 Entry ID: 5095038

promulgation (by July 21, 2021), without providing any reasoned basis for these failures.¹ OSHA has serious concerns as to the South Carolina State Plan's overall ability to maintain an "at least as effective" safety and health program.

South Carolina's ongoing failure to adopt the Healthcare ETS is continuously placing healthcare workers at risk as they are deprived of "at least as effective" protections against the grave danger from the hazard of workplace exposures to SARS-CoV-2 (the virus that causes COVID-19). And at this time, OSHA's concerns about the South Carolina State Plan are serious enough that it believes action is necessary under the OSH Act to ensure workers throughout the State receive workplace protections that are "at least as effective" as those provided by OSHA. Accordingly, OSHA will be publishing a Federal Register Notice announcing its intent to reconsider South Carolina's final approval status, and the reasons supporting its proposal to revoke South Carolina's final approval. No later than 10 days following the publication of this Federal Register Notice, South Carolina is required to publish reasonable notice within the State containing the same information. 29 CFR § 1902.49(a). A docket will be opened for public comment, at which time any interested persons will be afforded an opportunity to submit comment as to whether OSHA should finalize its proposed revocation. 29 CFR § 1902.49(c). OSHA will consider all the relevant information that has been submitted before making a final decision on the continuation or revocation of South Carolina's final approval. 29 CFR § 1902.52(a). If OSHA finalizes its proposed revocation, concurrent Federal enforcement and standards authority will be reinstated in South Carolina. 29 CFR § 1902.53(b). The extent to which Federal OSHA may decide to reassert Federal enforcement activities throughout the State will be dependent, in part, on South Carolina's response to these proceedings.

We very much value the partnership OSHA has with its State Plan partners, including South Carolina, and we would like to continue to work cooperatively on all issues impacting worker safety and health. However, OSHA is taking action at this time due to its obligation under the OSH Act to ensure that State Plans are "at least as effective" as the Federal program. If you have any questions about this process, please let me know.

Thank you for your attention and prompt response to this serious matter.

Sincerely,

James S. Frederick

Acting Assistant Secretary

¹ OSHA acknowledges that South Carolina notified OSHA on July 9, 2021, of a plan to move forward with adoption of a permanent infectious disease standard by November 6, 2021. However, that notification was provided after the required due date for intent of July 6, 2021, adoption of the permanent standard is currently projected to occur at a future date, well after the ETS adoption due date of July 21, 2021, and OSHA has no knowledge of what this future permanent standard will cover. Accordingly, that notification failed to satisfy either South Carolina's 15-day requirement to notify OSHA of its intended action, or its 30-day requirement to adopt an equivalent measure.

Exhibit D

U.S. Department of Labor

Occupational Safety and Health Administration Washington, D.C. 20210



October 19, 2021

The Honorable Jaceson Maughan Commissioner Utah Labor Commission 160 East 300 South, P.O. Box 146650 Salt Lake City, Utah 84114-6650

Dear Commissioner Maughan:

This letter is to inform you that, based on its continued evaluations of the Utah State Plan, the Occupational Safety and Health Administration (OSHA) is reconsidering its decision granting the Utah State Plan's affirmative Section 18(e) determination, otherwise known as final approval. Accordingly, OSHA will be initiating reconsideration proceedings with a proposal to revoke Utah's final approval, during which time any interested persons will be given an opportunity to provide OSHA with reasons why the proposed revocation should not be finalized.

Utah was granted final approval on July 16, 1985, and as such, was thereafter bound by the requirements of being a State Plan, as set forth in Title 29 of the Code of Federal Regulations, Section 1902.32(e), which provides:

Once a State's plan, or any modification thereof, has been given an affirmative 18(e) determination, the State is required to maintain a program which will meet the requirements of section 18(c) [of the Occupational Safety and Health Act (OSH Act)] and will continue to be "at least as effective as" the Federal program operations in the issues covered by the determination. As the Federal program changes and thereby becomes more effective, the State is correspondingly required to adjust its program at a level which would provide a program for workplace safety and health which would be "at least as effective as" the improvements in the Federal program. A failure to comply with this requirement may result in the revocation of the affirmative 18(e) [final approval] determination and the resumption of Federal enforcement and standards authority and/or in the commencement of proceedings for the withdrawal of approval of the plan, or any portion thereof, pursuant to 29 CFR part 1955.

As a result of Utah's continued failure to adopt a COVID-19 Healthcare Emergency Temporary Standard (Healthcare ETS), the Utah State Plan is less effective than the Federal program. Moreover, Utah failed to meet any of its required regulatory timeframes with respect to adoption of OSHA's Healthcare ETS, including failing to notify OSHA of the action it intended to take within 15 days of promulgation (by July 6, 2021) and failing to adopt the Healthcare ETS or an "at least as effective" alternative within 30 days of promulgation (by July 21, 2021) without providing any reasoned basis for these failures. ¹ To date, Utah has not provided any response or

Appellate Case: 21-3494 Page: 9 Date Filed: 11/05/2021 Entry ID: 5095038

¹ OSHA acknowledges receipt of a letter from Utah's Governor Cox on July 21, 2021, requesting that OSHA withdraw the Healthcare ETS. That letter failed to satisfy either Utah's 15-day requirement to notify OSHA of its

indication of an intent to either adopt the Healthcare ETS or an "at least as effective" state standard. OSHA has serious concerns as to the Utah State Plan's overall ability to maintain an "at least as effective" safety and health program.

Utah's ongoing failure to adopt the Healthcare ETS is continuously placing healthcare workers at risk as they are deprived of "at least as effective" protections against the grave danger from the hazard of workplace exposures to SARS-CoV-2 (the virus that causes COVID-19). And at this time, OSHA's concerns about the Utah State Plan are serious enough that it believes action is necessary under the OSH Act to ensure workers throughout the State receive workplace protections that are "at least as effective" as those provided by OSHA. Accordingly, OSHA will be publishing a Federal Register Notice announcing its intent to reconsider Utah's final approval status, and the reasons supporting its proposal to revoke Utah's final approval. No later than 10 days following the publication of this Federal Register Notice, Utah is required to publish reasonable notice within the State containing the same information. 29 CFR § 1902.49(a). A docket will be opened for public comment, at which time any interested persons will be afforded an opportunity to submit comment as to whether OSHA should finalize its proposed revocation. 29 CFR § 1902.49(c). OSHA will consider all the relevant information that has been submitted before making a final decision on the continuation or revocation of Utah's final approval. 29 CFR § 1902.52(a). If OSHA finalizes its proposed revocation, concurrent Federal enforcement and standards authority will be reinstated in Utah. 29 CFR § 1902.53(b). The extent to which Federal OSHA may decide to reassert Federal enforcement activities throughout the State will be dependent, in part, on Utah's response to these proceedings.

We very much value the partnership OSHA has with its State Plan partners, including Utah, and we would like to continue to work cooperatively on all issues impacting worker safety and health. However, OSHA is taking action at this time due to its obligation under the OSH Act to ensure that State Plans are "at least as effective" as the Federal program. If you have any questions about this process, please let me know.

Thank you for your attention and prompt response to this serious matter.

Sincerely,

James S. Frederick

Acting Assistant Secretary

intended action, or its 30-day requirement to adopt an equivalent measure, and it provided no assurance that Utah would meet its State Plan obligations to do so. In a letter dated September 20, 2021, OSHA responded and reiterated that the Healthcare ETS is presently necessary to protect affected employees from the grave danger posed by COVID-19.

IN THE UNITED STATES COURT OF APPEALS FOR THE EIGHTH CIRCUIT

STATE OF MISSOURI, et al.,	
Petitioners,	
v.	
UNITED STATES DEPARTMENT OF LABOR, et al.,	Case No
Respondents.	

DECLARATION OF ROBIN SESSIONS COOLEY

Pursuant to 28 U.S.C. § 1746, I hereby declare as follows:

- 1. I am Director of the Wyoming Department of Workforce Services (DWS), which includes the Wyoming Occupational Safety and Health Administration (OSHA). In that capacity, I am responsible for the management and oversight of Wyoming OSHA. I am also a resident of Wyoming and over the age of majority. I have personal knowledge of all facts stated in this declaration.
- 2. Wyoming has a State plan under the Occupational Safety and Health Act (OSH Act) that received initial approval on May 3, 1974, and final approval on June 27, 1985. 29 C.F.R. § 1952.18. States with State plans administer their OSH Act monitoring and enforcement operations at the state level, rather than relying on a federally-administered program without oversight of a State agency.

- 3. The Wyoming State plan provides for the development and adoption of standards which are or will be at least as effective as those promulgated under section 6 of the OSH Act, including Emergency Temporary Standards issued thereunder.
- 4. Wyoming's State plan covers all private industry, with some limited exceptions, as well as State and local governmental entities, which is a requirement of having a State plan. Private and public employers who are not subject to the jurisdiction of Wyoming OSHA include: entities operating on Warren Air Force Base, Yellowstone National Park, Mine operations, Federal workers, United States Postal Service employees, any maritime employment, employers in aerospace or airline industries, and some agricultural employers.
- 5. The ETS requiring all employers with 100 or more employees to ensure their workers are vaccinated or tested weekly will impact both private employers doing business in Wyoming and State and local governmental entities who are made subject to its requirements by virtue of Wyoming's status as a plan State under the OSH Act.
- 6. According to the 2020 U.S. Census, Wyoming has a total population of approximately 576,851 people.
- 7. The staff at the Wyoming DWS maintains statistics about employment in the State of Wyoming.

- 8. According to the latest statistics available to DWS that are current as of October 1, 2021, but which may be subject to later revision, a total of 255,062 individuals are employed in the State of Wyoming.
- 9. Of those 255,062 total employees, 53,097 work for private employers with at least 100 employees (20.8% of the total Wyoming workforce). There are 222 private employers in the State of Wyoming that employ at least 100 employees. These private employers would be required to comply with the ETS.
- 10. Of those 255,062 total employees, 53,365 work for public employers with at least 100 employees (20.9% of the total Wyoming workforce). There are 122 public employers in the State of Wyoming that employ at least 100 employees. These public employers, including the State of Wyoming itself, would be required to comply with the ETS.
- 11. A total of 106,462 individuals in Wyoming work for private and public employers with at least 100 employees, which means 41.7% of the total Wyoming workforce and 18.5% of the total population of Wyoming would be covered by the ETS.
- 12. Because Wyoming has a State plan, Wyoming OSHA would be required by the OSH Act to enforce the ETS. This additional enforcement burden imposes a cost on the State of Wyoming which could include hiring and training

additional compliance officers.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this day of October 2021.

Robin Sessions Cooley

Director

Wyoming Department of Workforce Services

UNITED STATES COURT OF APPEALS FOR THE EIGHTH CIRCUIT

State of Missouri, et al.	
Petitioners v.	Case No.
Joseph R. Biden, Jr., et al.	
Defendants	

DECLARATION OF RICHARD LAVERS, DEPUTY COMMISSIONER NEW HAMPSHIRE EMPLOYMENT SECURITY

- I, Richard Lavers, being duly sworn on oath depose and state as follows:
 - 1. I am the Deputy Commissioner of New Hampshire Employment Security ("NHES"). I have personal knowledge of the facts contained herein.
 - 2. In the performance of its statutory duties, NHES collects wage data about employment in the State of New Hampshire.
 - 3. According to the data collected by NHES, there are currently 755 private employers with 100 or more employees in the State of New Hampshire.
 - 4. Also according to this data, approximately 254,202 employees work for private employers with 100 or more employees in the State of New Hampshire.

I declare under penalty of perjury that the foregoing is true and eorreco.

Dated: October 18, 2021

Richard Lavers

Deputy Commissioner

New Hampshire Employment Security

UNITED STATES COURT OF APPEALS FOR THE EIGHTH CIRCUIT

STATE OF MISSOURI,)
STATE OF ARIZONA,)
STATE OF NEBRASKA,)
STATE OF MONTANA,	
STATE OF ARKANSAS,)
STATE OF IOWA,) Case No.
STATE OF NORTH DAKOTA,)
STATE OF SOUTH DAKOTA,)
STATE OF ALASKA,	
STATE OF NEW HAMPSHIRE,)
STATE OF WYOMING,	
AAI, INC.,	
DOOLITTLE TRAILER MFG., INC.,)
CHRISTIAN EMPLOYERS ALLIANCE,)
)
Petitioners,)
v.	
JOSEPH R. BIDEN, JR.,)
in his official capacity as)
President of the United States of America,)
Tresident of the Office States of America,)
THE UNITED STATES OF AMERICA,)
*)
DOUGLAS PARKER,)
Assistant Secretary of Labor for Occupational)
Safety and Health,)
)
OCCUPATIONAL SAFETY AND HEALTH)
ADMINISTRATION,)
MARTIN J. WALSH,)
Secretary of Labor,	
UNITED STATES DEPARTMENT OF LABOR,)
,)
Respondents.)
)
)
)
)

Appellate Case: 21-3494 Page: 1 Date Filed: 11/05/2021 Entry ID: 5095038

DECLARATION OF DR. TAMIKA LEDBETTER

- 1. My name is Dr. Tamika L. Ledbetter, and I am the Commissioner of the Department of Labor and Workforce Development for the State of Alaska ("Labor Commissioner"). I am also a resident of Alaska and over the age of majority. I have personal knowledge of the facts in this declaration, and those facts are true and correct to the best of my knowledge.
- 2. My duties as Labor Commissioner include leading the Department of Labor and Workforce Development ("DOLWD") and administering Alaska's Occupational Safety and Health program under Alaska Statute (AS) 18.60 *et seq*.
- 3. The State of Alaska has an approved state plan under section 18 of the Occupational Safety and Health Act of 1970. Our plan was initially approved in 1973 and given final approval by the United States Department of Labor in 1984. The attached **Exhibit "A"** is a true and accurate copy of the Certificate of Final State Plan Approval.
- 4. Under Alaska's state plan, DOLWD is responsible for enforcing workplace safety and health standards, with limited exceptions, for employers throughout Alaska. The State of Alaska and other state and local government employers are covered by these standards.
- 5. DOLWD receives an annual matching federal grant to support its operations under the state plan. For the most recent federal fiscal year starting on October 1, 2021, the federal base award was \$1,550,500.00.
- 6. On November 4, 2021, the Occupational Safety and Health Administration ("OSHA") filed its COVID-19 Vaccination and Testing Emergency Temporary Standard with the Office of the Federal Register that will be published in the Federal Register on November 5,

Appellate Case: 21-3494 Page: 2 Date Filed: 11/05/2021 Entry ID: 5095038

2021.

7. If this emergency temporary standard is not stayed, federal regulations (29 C.F.R.

§ 1953.5(b)) require the State of Alaska to adopt the standard within 30 days or demonstrate that

the standard is unnecessary because the State of Alaska's standard is already at least as effective

as the emergency temporary standard. If the State of Alaska adopts the emergency temporary

standard, DOLWD would be required to enforce it against all covered employers, including the

State of Alaska.

8. The State is required to provide OSHA with notice of the actions it will take

within 15 days of receiving notice of the standard.

9. OSHA has already notified three other States with state plans that it is initiating

reconsideration proceedings to propose revoking their state plans because they did not adopt an

emergency temporary standard issued in June 2021 that applied only to healthcare employers.

The attached Exhibits "B", "C", and "D" are copies of the letters from OSHA to Arizona, South

Carolina, and Utah, respectively.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on November 5, 2021.

Dr. Tamika L. Ledbetter

Commissioner, Department

Of Labor and Workforce Development

State of Alaska

Appellate Case: 21-3494 Page: 3 Date Filed: 11/05/2021 Entry ID: 5095038



Certificate of Final State Plan Approval

awarded by

The Occupational Safety and Health Administration

In accordance with the provisions of the Occupational Safety and Health Act of Nineteen Hundred and Sevenly, a determination has been made, pursuant to Section Eighteen thereof, that the

Occupational Safety and Health Program

of the

State of Alaska

In actual operation is providing for the development and enforcement of standards applicable to employers and employees, within its boundaries, in a manner at least as effective as the program of the Jederal Occupational Safety and Health Administration.

In Accordance with this determination, final approval of the State's Occupational Safety and Health Plan has been granted, and authority for concurrent Tederal enforcement in those issues covered by the State's plan is thereby relinquished.

In recognition of this successful assumption of the fullest responsibility permitted under law for the administration and enforcement of its own occupational safety and health program, and in testimony to the federal-state partnership manifested thereby, we have set our hand

1his 26th day of September., Hineleen Hundred and Cighty-tour.

Raymond J. Dorono Secretify of Babor

Tobler W. Tourland
Thisistant Secretary of Babar

Appellate Case: 21-3494 Page: 4 Date Filed: 11/05/2021 Entry ID: 5095038

Occupational Safety and Health Administration Washington, D.C. 20210



October 19, 2021

James Ashley Director Industrial Commission of Arizona 800 W. Washington St. Phoenix, AZ 85007

Dear Director Ashley:

This letter is to inform you that, based on its continued evaluations of the Arizona State Plan, the Occupational Safety and Health Administration (OSHA) is reconsidering its decision granting the Arizona State Plan's affirmative Section 18(e) determination, otherwise known as final approval. Accordingly, OSHA will be initiating reconsideration proceedings with a proposal to revoke Arizona's final approval, during which time any interested persons will be given an opportunity to provide OSHA with reasons why the proposed revocation should not be finalized.

Arizona was granted final approval on June 20, 1985, and as such, was thereafter bound by the requirements of being a State Plan, as set forth in Title 29 of the Code of Federal Regulations, Section 1902.32(e), which provides:

Once a State's plan, or any modification thereof, has been given an affirmative 18(e) determination, the State is required to maintain a program which will meet the requirements of section 18(c) [of the Occupational Safety and Health Act (OSH Act)] and will continue to be "at least as effective as" the Federal program operations in the issues covered by the determination. As the Federal program changes and thereby becomes more effective, the State is correspondingly required to adjust its program at a level which would provide a program for workplace safety and health which would be "at least as effective as" the improvements in the Federal program. A failure to comply with this requirement may result in the revocation of the affirmative 18(e) [final approval] determination and the resumption of Federal enforcement and standards authority and/or in the commencement of proceedings for the withdrawal of approval of the plan, or any portion thereof, pursuant to 29 CFR part 1955.

As a result of Arizona's continued failure to adopt a COVID-19 Healthcare Emergency Temporary Standard (Healthcare ETS), the Arizona State Plan is less effective than the Federal program. Moreover, Arizona failed to meet any of its required regulatory timeframes with respect to adoption of OSHA's Healthcare ETS, including failing to notify OSHA of the action it intended to take within 15 days of promulgation (by July 6, 2021) and failing to adopt the Healthcare ETS or an "at least as effective" alternative within 30 days of promulgation (by July

Appellate Case: 21-3494 Page: 5 Date Filed: 11/05/2021 Entry ID: 5095038

21, 2021), without providing any reasoned basis for these failures. OSHA has serious concerns about the Arizona State Plan's overall ability to maintain an "at least as effective" safety and health program.

Arizona's ongoing failure to adopt the Healthcare ETS is continuously placing healthcare workers at risk as they are deprived of "at least as effective" protections against the grave danger from the hazard of workplace exposures to SARS-CoV-2 (the virus that causes COVID-19). And at this time, OSHA's concerns about the Arizona State Plan are serious enough that it believes action is necessary under the OSH Act to ensure workers throughout the State receive workplace protections that are "at least as effective" as those provided by OSHA. Accordingly, OSHA will be publishing a Federal Register Notice announcing its intent to reconsider Arizona's final approval status, and the reasons supporting its proposal to revoke Arizona's final approval. No later than 10 days following the publication of this Federal Register Notice, Arizona is required to publish reasonable notice within the State containing the same information. 29 CFR § 1902.49(a). A docket will be opened for public comment, at which time any interested persons will be afforded an opportunity to submit comment as to whether OSHA should finalize its proposed revocation. 29 CFR § 1902.49(c). OSHA will consider all the relevant information that has been submitted before making a final decision on the continuation or revocation of Arizona's final approval. 29 CFR § 1902.52(a). If OSHA finalizes its proposed revocation, concurrent Federal enforcement and standards authority will be reinstated in Arizona. 29 CFR § 1902.53(b). The extent to which Federal OSHA may decide to reassert Federal enforcement activities throughout the State will be dependent, in part, on Arizona's response to these proceedings.

We very much value the partnership OSHA has with its State Plan partners, including Arizona, and we would like to continue to work cooperatively on all issues impacting worker safety and health. However, OSHA is taking action at this time due to its obligation under the OSH Act to ensure that State Plans are "at least as effective" as the Federal program. If you have any questions about this process, please let me know.

Thank you for your attention and prompt response to this serious matter.

Sincerely,

James S. Frederick

Acting Assistant Secretary

¹ The Arizona Division of Occupational Safety and Health (ADOSH) responded on July 16, 2021, after the 15 day timeframe, with a proposal to adopt only portions of OSHA's Healthcare ETS, while relying on existing state law to cover the remaining issues. OSHA had several conversations with ADOSH about its intent to rely on existing state law to cover certain issues and came to a mutual understanding that this proposal would not be "at least as effective" as OSHA's provisions in the ETS. OSHA sent a letter to ADOSH on September 16, 2021, memorializing this understanding. Meanwhile, ADOSH never took action to adopt the other provisions of OSHA's Healthcare ETS.

Exhibit C

U.S. Department of Labor

Occupational Safety and Health Administration Washington, D.C. 20210



October 19, 2021

Emily H. Farr, Director South Carolina Department of Labor, Licensing and Regulation Synergy Business Park, Kingstree Building 110 Centerview Dr. Columbia, SC 29210

Dear Director Farr:

This letter is to inform you that, based on its continued evaluations of the South Carolina State Plan, the Occupational Safety and Health Administration (OSHA) is reconsidering its decision granting the South Carolina State Plan's affirmative Section 18(e) determination, otherwise known as final approval. Accordingly, OSHA will be initiating reconsideration proceedings with a proposal to revoke South Carolina's final approval, during which time any interested persons will be given an opportunity to provide OSHA with reasons why the proposed revocation should not be finalized.

South Carolina was granted final approval on December 18, 1987, and as such, was thereafter bound by the requirements of being a State Plan, as set forth in Title 29 of the Code of Federal Regulations, Section 1902.32(e), which provides:

Once a State's plan, or any modification thereof, has been given an affirmative 18(e) determination, the State is required to maintain a program which will meet the requirements of section 18(c) [of the Occupational Safety and Health Act (OSH Act)] and will continue to be "at least as effective as" the Federal program operations in the issues covered by the determination. As the Federal program changes and thereby becomes more effective, the State is correspondingly required to adjust its program at a level which would provide a program for workplace safety and health which would be "at least as effective as" the improvements in the Federal program. A failure to comply with this requirement may result in the revocation of the affirmative 18(e) [final approval] determination and the resumption of Federal enforcement and standards authority and/or in the commencement of proceedings for the withdrawal of approval of the plan, or any portion thereof, pursuant to 29 CFR part 1955.

As a result of South Carolina's continued failure to adopt a COVID-19 Healthcare Emergency Temporary Standard (Healthcare ETS), the South Carolina State Plan is less effective than the Federal program. Moreover, South Carolina failed to meet any of its required regulatory timeframes with respect to adoption of OSHA's Healthcare ETS, including failing to notify OSHA of the action it intended to take within 15 days of promulgation (by July 6, 2021) and failing to adopt the Healthcare ETS or an "at least as effective" alternative within 30 days of

Appellate Case: 21-3494 Page: 7 Date Filed: 11/05/2021 Entry ID: 5095038

promulgation (by July 21, 2021), without providing any reasoned basis for these failures.¹ OSHA has serious concerns as to the South Carolina State Plan's overall ability to maintain an "at least as effective" safety and health program.

South Carolina's ongoing failure to adopt the Healthcare ETS is continuously placing healthcare workers at risk as they are deprived of "at least as effective" protections against the grave danger from the hazard of workplace exposures to SARS-CoV-2 (the virus that causes COVID-19). And at this time, OSHA's concerns about the South Carolina State Plan are serious enough that it believes action is necessary under the OSH Act to ensure workers throughout the State receive workplace protections that are "at least as effective" as those provided by OSHA. Accordingly, OSHA will be publishing a Federal Register Notice announcing its intent to reconsider South Carolina's final approval status, and the reasons supporting its proposal to revoke South Carolina's final approval. No later than 10 days following the publication of this Federal Register Notice, South Carolina is required to publish reasonable notice within the State containing the same information. 29 CFR § 1902.49(a). A docket will be opened for public comment, at which time any interested persons will be afforded an opportunity to submit comment as to whether OSHA should finalize its proposed revocation. 29 CFR § 1902.49(c). OSHA will consider all the relevant information that has been submitted before making a final decision on the continuation or revocation of South Carolina's final approval. 29 CFR § 1902.52(a). If OSHA finalizes its proposed revocation, concurrent Federal enforcement and standards authority will be reinstated in South Carolina. 29 CFR § 1902.53(b). The extent to which Federal OSHA may decide to reassert Federal enforcement activities throughout the State will be dependent, in part, on South Carolina's response to these proceedings.

We very much value the partnership OSHA has with its State Plan partners, including South Carolina, and we would like to continue to work cooperatively on all issues impacting worker safety and health. However, OSHA is taking action at this time due to its obligation under the OSH Act to ensure that State Plans are "at least as effective" as the Federal program. If you have any questions about this process, please let me know.

Thank you for your attention and prompt response to this serious matter.

Sincerely,

James S. Frederick

Acting Assistant Secretary

¹ OSHA acknowledges that South Carolina notified OSHA on July 9, 2021, of a plan to move forward with adoption of a permanent infectious disease standard by November 6, 2021. However, that notification was provided after the required due date for intent of July 6, 2021, adoption of the permanent standard is currently projected to occur at a future date, well after the ETS adoption due date of July 21, 2021, and OSHA has no knowledge of what this future permanent standard will cover. Accordingly, that notification failed to satisfy either South Carolina's 15-day requirement to notify OSHA of its intended action, or its 30-day requirement to adopt an equivalent measure.

Exhibit D

U.S. Department of Labor

Occupational Safety and Health Administration Washington, D.C. 20210



October 19, 2021

The Honorable Jaceson Maughan Commissioner Utah Labor Commission 160 East 300 South, P.O. Box 146650 Salt Lake City, Utah 84114-6650

Dear Commissioner Maughan:

This letter is to inform you that, based on its continued evaluations of the Utah State Plan, the Occupational Safety and Health Administration (OSHA) is reconsidering its decision granting the Utah State Plan's affirmative Section 18(e) determination, otherwise known as final approval. Accordingly, OSHA will be initiating reconsideration proceedings with a proposal to revoke Utah's final approval, during which time any interested persons will be given an opportunity to provide OSHA with reasons why the proposed revocation should not be finalized.

Utah was granted final approval on July 16, 1985, and as such, was thereafter bound by the requirements of being a State Plan, as set forth in Title 29 of the Code of Federal Regulations, Section 1902.32(e), which provides:

Once a State's plan, or any modification thereof, has been given an affirmative 18(e) determination, the State is required to maintain a program which will meet the requirements of section 18(c) [of the Occupational Safety and Health Act (OSH Act)] and will continue to be "at least as effective as" the Federal program operations in the issues covered by the determination. As the Federal program changes and thereby becomes more effective, the State is correspondingly required to adjust its program at a level which would provide a program for workplace safety and health which would be "at least as effective as" the improvements in the Federal program. A failure to comply with this requirement may result in the revocation of the affirmative 18(e) [final approval] determination and the resumption of Federal enforcement and standards authority and/or in the commencement of proceedings for the withdrawal of approval of the plan, or any portion thereof, pursuant to 29 CFR part 1955.

As a result of Utah's continued failure to adopt a COVID-19 Healthcare Emergency Temporary Standard (Healthcare ETS), the Utah State Plan is less effective than the Federal program. Moreover, Utah failed to meet any of its required regulatory timeframes with respect to adoption of OSHA's Healthcare ETS, including failing to notify OSHA of the action it intended to take within 15 days of promulgation (by July 6, 2021) and failing to adopt the Healthcare ETS or an "at least as effective" alternative within 30 days of promulgation (by July 21, 2021) without providing any reasoned basis for these failures. ¹ To date, Utah has not provided any response or

Appellate Case: 21-3494 Page: 9 Date Filed: 11/05/2021 Entry ID: 5095038

¹ OSHA acknowledges receipt of a letter from Utah's Governor Cox on July 21, 2021, requesting that OSHA withdraw the Healthcare ETS. That letter failed to satisfy either Utah's 15-day requirement to notify OSHA of its

indication of an intent to either adopt the Healthcare ETS or an "at least as effective" state standard. OSHA has serious concerns as to the Utah State Plan's overall ability to maintain an "at least as effective" safety and health program.

Utah's ongoing failure to adopt the Healthcare ETS is continuously placing healthcare workers at risk as they are deprived of "at least as effective" protections against the grave danger from the hazard of workplace exposures to SARS-CoV-2 (the virus that causes COVID-19). And at this time, OSHA's concerns about the Utah State Plan are serious enough that it believes action is necessary under the OSH Act to ensure workers throughout the State receive workplace protections that are "at least as effective" as those provided by OSHA. Accordingly, OSHA will be publishing a Federal Register Notice announcing its intent to reconsider Utah's final approval status, and the reasons supporting its proposal to revoke Utah's final approval. No later than 10 days following the publication of this Federal Register Notice, Utah is required to publish reasonable notice within the State containing the same information. 29 CFR § 1902.49(a). A docket will be opened for public comment, at which time any interested persons will be afforded an opportunity to submit comment as to whether OSHA should finalize its proposed revocation. 29 CFR § 1902.49(c). OSHA will consider all the relevant information that has been submitted before making a final decision on the continuation or revocation of Utah's final approval. 29 CFR § 1902.52(a). If OSHA finalizes its proposed revocation, concurrent Federal enforcement and standards authority will be reinstated in Utah. 29 CFR § 1902.53(b). The extent to which Federal OSHA may decide to reassert Federal enforcement activities throughout the State will be dependent, in part, on Utah's response to these proceedings.

We very much value the partnership OSHA has with its State Plan partners, including Utah, and we would like to continue to work cooperatively on all issues impacting worker safety and health. However, OSHA is taking action at this time due to its obligation under the OSH Act to ensure that State Plans are "at least as effective" as the Federal program. If you have any questions about this process, please let me know.

Thank you for your attention and prompt response to this serious matter.

Sincerely,

James S. Frederick

Acting Assistant Secretary

intended action, or its 30-day requirement to adopt an equivalent measure, and it provided no assurance that Utah would meet its State Plan obligations to do so. In a letter dated September 20, 2021, OSHA responded and reiterated that the Healthcare ETS is presently necessary to protect affected employees from the grave danger posed by COVID-19.

IN THE UNITED STATES COURT OF APPEALS FOR EIGHTH CIRCUIT

STATE OF MISSOURI, et al.,	
Petitioners,	
V.	Case No
United States Department of Labor, et al.,	
Respondents.	

DECLARATION OF MIKE ANDERSON

- I, Mike Anderson, swear or affirm as follows:
- 1. My name is Mike Anderson and I am over the age of 21 years of age and competent to testify to the matters attested herein.
- 2. I am the Owner and CEO of AAI, Inc., a Nebraska business that operates 6 automotive dealerships in Nebraska and Missouri. We employ more than 540 people which includes 440 full-time employees who generate gross revenues between \$250 million and \$300 million annually.
- 3. AAI, Inc., has its principal place of business in Lincoln, Nebraska, which is located within the geographical boundaries of the Eighth Circuit.
- 4. AAI, Inc., will be adversely affected by the emergency temporary standard (ETS) issued by OSHA requiring vaccination or weekly testing for all its employees. That ETS applies to AAI, Inc., because, as mentioned above, the company employs more than 540 people. Many of my employees (from top-level management down to general labor positions) have advised me that

they have a personal objection to the Covid-19 vaccines including, but not limited to, medical, religious, moral and ethical reasons. These employees have stated that they will leave my employ rather than succumb to mandated vaccines. Some of these employees have also told me that they will not undergo mandatory periodic testing for Covid-19 because they have medical, religious, moral, ethical or privacy concerns with submitting to such screening. The loss of the objecting employees would be devastating to my business. Automotive products and services do not sell themselves, people do. Without people, we cannot sell vehicles. Without people, we cannot service vehicles. People are the heart of our business and the loss of top, mid and/or entry level employees would lead to a crippling labor shortage, loss of revenue and the potential destruction of our company.

5. AAI, Inc., will also suffer direct economic harms. If the ETS requires employers to bear the costs of weekly testing, that will impose direct economic injuries on the company. Even if the ETS does not require employers to directly bear the costs of weekly testing, AAI, Inc., will likely have to compensate employees for the costs or split the costs with them to retain employees or provide paid time office for employees to get their testing. That, too, would impose economic harms on the company. AAI, Inc., will also be required to expend scarce corporate resources to collect proof of vaccination status and proof of periodic testing from its employees and to maintain records of vaccination status and weekly test results.

6. AAI, Inc., will also suffer harm because it does not want to pry into its employees personal and private medical decisions. AAI, Inc., wants its employees to make their own medical decisions about vaccinations and Covid-19 testing without the company intrusively demanding to know that information. AAI, Inc., wants to respect its employees' medical privacy, but the ETS is forcing the company to violate it.

- 7. AAI, Inc., would lose employees due to the controversial and intrusive nature of ETS's vaccine mandate which will cause a devastating loss of employees and business.
- 8. To prevent these adverse effects, AAI, Inc., is petitioning the U.S. Court of Appeals for the Eighth Circuit for judicial review to invalidate the ETS.

Pursuant to 28 U.S.C. §1746, I declare that the foregoing is true and correct.

Executed on	10-14	, 2021	all
_			Mike Anderson

IN THE UNITED STATES COURT OF APPEALS FOR EIGHTH CIRCUIT

STATE OF MISSOURI, et al.,		
Petitioners,		
	Case No.	<u> </u>
UNITED STATES DEPARTMENT OF LABOR, et al.,		
Respondents.		

DECLARATION OF RYAN WERDEHAUSEN

- I, Ryan Werdehausen, swear or affirm as follows:
- 1. My name is Ryan Werdehausen, and I am over the age of 21 years of age and competent to testify to the matters attested herein.
- 2. I am the operation manager of Doolittle Trailer Mfg, Inc., a Missouri business that is a leading manufacturer of utility, dump, deckover and equipment trailers. We are located in Holts Summit, Missouri. We employ more than 100 people which includes more than 100 full-time employees.
- 3. Doolittle Trailer Mfg, Inc. (Doolittle), has its principal place of business in Holts Summit, Missouri, which is located within the geographical boundaries of the Eighth Circuit.
- 4. Doolittle will be adversely affected by the emergency temporary standard (ETS) issued by OSHA requiring vaccination or weekly testing for all its employees. That

ETS applies to Doolittle, because, as mentioned above, the company employs more than 100 people. Many of my employees (from top-level management down to general labor positions) have advised me that they have a personal objection to the Covid-19 vaccines including, but not limited to, medical, religious, moral and ethical reasons. These employees have stated that they will leave my employ rather than succumb to mandated vaccines. Some of these employees have also told me that they will not undergo mandatory periodic testing for Covid-19 because they have medical, religious, moral, ethical or privacy concerns with submitting to such screening. The loss of the objecting employees would be devastating to my business. Without people, we cannot sell manufacture trailers. People are the heart of our business and the loss of top, mid and/or entry level employees would lead to a crippling labor shortage, loss of revenue and the potential destruction of our company.

- 5. Doolittle will also suffer direct economic harms. If the ETS requires employers to bear the costs of weekly testing, that will impose direct economic injuries on the company. Even if the ETS does not require employers to directly bear the costs of weekly testing, Doolittle, will likely have to compensate employees for the costs or split the costs with them to retain employees or provide paid time office for employees to get their testing. That, too, would impose economic harms on the company. Doolittle will also be required to expend scarce corporate resources to collect proof of vaccination status and proof of periodic testing from its employees and to maintain records of vaccination status and weekly test results.
- 6. Doolittle will also suffer harm because it does not want to pry into its employees personal and private medical decisions. Doolittle wants its employees to make their own medical decisions about vaccinations and Covid-19 testing without the company

intrusively demanding to know that information. Doolittle wants to respect its employees' medical privacy, but the ETS is forcing the company to violate it.

- 7. Doolittle would lose employees due to the controversial and intrusive nature of ETS's vaccine mandate which will cause a devastating loss of employees and business.
- 8. To prevent these adverse effects, Doolittle, is petitioning the U.S. Court of Appeals for the Eighth Circuit for judicial review to invalidate the ETS.

Pursuant to 28 U.S.C. *1746, I declare that the foregoing is true and correct.

Executed on <u>Oct</u>, <u>//</u>, 2021

Ryan Werdehausen

DECLARATION OF SHANNON O. ROYCE

- I, Shannon O. Royce, hereby declare and state as follows:
 - 1. I am over 21 years of age and make this declaration on personal knowledge.
 - 2. I am the President of Christian Employers Alliance (CEA).
 - 3. CEA is a 501(c)(3) nonprofit corporation incorporated in the state of North Dakota.
- 4. CEA is a Christian membership ministry that exists to unite and serve Christian nonprofit and for-profit employers who wish to live out their faith in every-day life, including in their homes, schools, ministries, businesses, and communities.
- 5. CEA's mission is to unite, equip, and represent Christian-owned businesses to protect religious freedom and provide the opportunity for employees, businesses, and communities to flourish.
- 6. Members of CEA are employers, and they include both for-profit businesses and nonprofit organizations.

CEA Members' Christian Values

- 7. One of CEA's primary purposes is to support Christian employers and develop strategies for them, so that they, as part of their religious witness and exercise, may engage in employment practices in a manner that is consistent with a set of religious practices and beliefs consistent with biblical Christianity and determined by CEA's Board of Directors ("Christian Values").
- 8. To become a Member of CEA, an entity must adhere to CEA's Christian Values, including those discussed herein.
- 9. Members place Jesus Christ as the center and foundation of their organizations and are called to live out their faith in every aspect of their operations, including in the workplace.

- 10. Members must subscribe to a Statement of Faith, have a Christian highest executive officer or majority of its governing body, and have Section 501(c)(3) status or receive special approval by the CEA President.
- 11. For-profit members must be owned by a 51% majority of Christians and have a 51% majority of Christians on the member's governing body.
- 12. Members are dedicated to the health and well-being of their employees, physical and spiritual, because they have God-given inherent dignity.
 - 13. Members exercise their faith in every area of their lives, including in business.
- 14. Members are committed to the principle that God granted their owners, and employees the right to exercise faith freely without improper interference from the government.

CEA Membership

- 15. CEA has multiple members throughout the United States. They include both forprofit and nonprofit entities.
- 16. On November 4, 2021, OSHA filed with the Office of the Federal Register and placed on public display its "COVID-19 Vaccination and Testing; Emergency Temporary Standard," available at https://www.federalregister.gov/public-inspection/2021-23643/covid-19-vaccination-and-testing-emergency-temporary-standard ("ETS").
 - 17. The ETS applies to employers with 100 or more employees.
 - 18. The ETS is to be published in the Federal Register on November 5, 2021.
- 19. Upon publication in the Federal Register, the ETS is effective immediately, and employers must comply with various requirements in it either by 30 days or 60 days after publication.

- 20. Well over two dozen of CEA's members throughout the United States have 100 or more employees, and are not healthcare entities subject to other employee vaccine requirements.
- 21. For example, CEA has a Member located in Arkansas with over 300 employees (CEA's Arkansas Member).
- 22. CEA's Arkansas Member is a for-profit business that adheres to CEA's Christian Values.
- 23. CEA's Arkansas Member has a substantial number of employees who are unvaccinated, and some of those employees are unvaccinated because of their conscientious objections.
- 24. CEA's Arkansas Member, like CEA's other Covered Members, is dedicated to the health and well-being of its employees, physical and spiritual, because it believes the employees have God-given inherent dignity.
- 25. CEA's Arkansas Member, like CEA's other Covered Members, seeks to exercise its faith in every area of its business.
- 26. CEA's Arkansas Member, like CEA's other Covered Members, is committed to the principle that God granted the right to exercise faith freely without improper interference from the government.
- 27. Consequently, CEA's Arkansas Member encourages its employees to get vaccinated for COVID-19, but, like CEA's other Covered Members, CEA's Arkansas Member opposes being forced to either require the employees to be vaccinated against their consciences (because that would be a harm to their dignity), or to be subject to the significant costs of otherwise complying with the mandate or of penalties for noncompliance.

- 28. CEA's Arkansas Member, like CEA's other Covered Members, opposes the substantial burden on its religious beliefs that the ETS imposes by substantially pressuring the business to coerce its employees to get vaccinated in violation of the employees' consciences.
- 29. CEA also has several Members around the country that have more than 100 employees and operate as 501(c)(3) nonprofit religious organizations.
- 30. Many of those members share CEA's Arkansas Member's conviction that employees should not be forced to get vaccinated against their conscientious beliefs. They also fear losing committed, trained employees due to a vaccination or testing requirement from the federal government.

CEA's Stance on the OSHA Vaccination Mandate

- 31. CEA is not opposed to COVID-19 vaccines.
- 32. CEA is opposed to improper interference from the government in CEA's Members' operating activities.
- 33. Under CEA's Christian Values, CEA Members exercise their faith through all aspects of their business, including how they treat their employees.
- 34. According to CEA's Christian Values, CEA Members exercise their religious liberty in all aspects of how they carry out their business.
- 35. CEA's Members are committed to treating their employees with dignity, including refraining from engaging in improper coercion of their consciences.
- 36. Therefore, it is one of CEA's goals to represent the interests of its Members against actions such as OSHA's unlawful vaccine mandate.

The Costs of OSHA's Unlawful Vaccine Mandate

- 37. For the dozens of CEA Members with more than 100 employees, including the CEA Arkansas Member, they are covered by the recently issued Emergency Temporary Standard ("ETS") of the Occupational Safety and Health Administration ("OSHA").
- 38. CEA's Members covered by the ETS are referred to herein as "CEA's Covered Members."
 - 39. The ETS forces each of CEA's Covered Members to administer its requirements.
- 40. The costs of the ETS to CEA's Covered Members, including CEA's Arkansas Member specifically, will be substantial.
- 41. OSHA's ETS mandates that CEA's Covered Members keep records to demonstrate compliance. This means that CEA's Covered Members' administrative and other staff will need to devote precious time, personnel, and resources to collect, verify, and record vaccination and/or testing information.
- 42. Because such information will contain employees' sensitive health information, such an endeavor will involve an implementation of careful policies and training.
- 43. Implementing those requirements will entail significant additional resources, time and expense for CEA's Covered Members.
- 44. The ETS itself estimates millions of dollars in compliance costs for covered employers, including but not limited to: the "Employer Policy on Vaccination, Information Provided to Employees, and Rule Familiarization"; "Support for Employee Vaccination;" "Reporting COVID-19 Fatalities and Hospitalizations to OSHA," and "Recordkeeping." ETS at 246, 256, 273, and 276.
- 45. The employees of CEA's Covered Members will be forced to devote a significant amount of time and/or effort to comply with the ETS.

- 46. Unvaccinated employees will need to comply with the ETS as imposed on them through their employer. One way they may do so is by receiving the vaccine, often in violation of their deeply held convictions.
- 47. CEA's Covered Members will be required to be the instrument by which that part of the ETS is implemented, implicating CEA's Covered Members in burdening the consciences of some of their employees.
- 48. Complying with the ETS by receiving the vaccine will involve a loss of work time for trips to receive vaccine doses, loss of time for any short-term side effects such as flu symptoms that are common for receipt of vaccine doses, and loss of time as well as possible workers' compensation costs for any less-common adverse events that employees suffer from receipt of the vaccine.
- 49. As an alternative, if employees comply with the ETS by engaging in weekly testing, the employees will have to undergo a significant commitment of time and resources in receiving tests and results, and transmitting the results of the test to CEA's Covered Members.
- 50. Under the ETS, either the employer or the employee will have to pay the costs of weekly testing. If the employer pays, this will be a significant cost on the employer. If the employer makes the employees pay, this will impose significant costs on the employees, it will increase the coercive pressure on the employees to get vaccinated in violation of their conscience, and it will incentivize employees to leave the job because of the burdens and costs of testing.
- 51. CEA's Covered Members will incur significant expenses from complying with the ETS with respect to employees who comply by weekly testing if the employers pay for testing as might be necessary to retain employees and minimize pressure imposed on them, in the form of

costs of testing, costs of time for employees to obtain tests and test results and keeping records of test results.

- 52. In order to comply with the ETS either for vaccination or for testing, CEA's Covered Members will incur significant expenses from development of a policy to implement the ETS requirements, review by management of the ETS, related regulations, and subsequent guidance to ensure an understanding of the ETS's requirements, legal fees to ensure proper compliance with the ETS's requirements, training of staff to implement the policy, and compliance with investigatory requests by OSHA.
- 53. If CEA's Covered Members do not comply with the ETS, OSHA poses a threat of substantial fines which would injure and could shut down CEA's Covered Members.
- 54. OSHA's threat of punitive fines for non-compliance with the ETS may force CEA's Covered Members to terminate employees who do not submit to the mandates of the ETS.
- 55. CEA's Covered Members will therefore incur the human resources costs involved in the disciplinary process of non-compliant employees, their termination, and the process of finding and training new employees.
- 56. Especially in the current economy where there are labor shortages, the costs of replacing non-compliant employees will be significant for CEA's Covered Members.
- 57. Moreover, because CEA's Covered Members have a commitment to treat their employees with dignity according to CEA's and the Members' Christian Values, including CEA's Arkansas Member who opposes coercing its employees' consciences on the COVID-19 vaccine, the need to fire non-compliant employees may cause CEA's Covered Members to treat their employees in ways that violate the company's view of the dignity of their employees and their commitment to those employees.

- 58. For the nonprofit religious organizations that are among CEA's Covered Members, all of their resources are devoted to engaging in an overtly religious mission of ministry, education, expression, and Christian witness.
- 59. All of the ETS's burdens on the nonprofit religious organizations that are among CEA's Covered Members impose a substantial burden on those entities' religious exercise.
- 60. The need to fire any employee for non-compliance among those entities will violate their choice to engage in their religious exercise through the selection of each unique employee to fulfill its religious mission.
- 61. As religious organizations, the nonprofit religious organizations that are among CEA's Covered Members strongly believe that they should have autonomy in hiring their employees.
- 62. The ETS is already imposing its costs on CEA's Covered Members because it goes into effect immediately upon publication. Notwithstanding the 30 day or 60 day compliance deadlines for its various provisions, in order for employers to achieve full compliance by those dates, the Covered Members must begin developing and implementing compliance policies immediately in order to be considered compliant by OSHA within the timeframes allowed.
- 63. The costs the ETS imposes on CEA's Covered Members are irreparable because the Covered Members cannot recover their financial costs from OSHA, and the requirements leading them to treat their employees inconsistent with Christian Values, fire some employees, and lose key staff to fulfill their missions cannot be compensated financially.

Pursuant to 28 U.S.C. § 1746, I declare that the foregoing is true and correct.

Executed on November 4, 2021

Shannoh O. Røyce

DECLARATION OF KYLE L. GROOS

I, Kyle L. Groos, swear or affirm as follows:

1. I am over the age of 21 years of age and competent to testify to the matters attested

herein.

2. I am the President of the Sioux Falls Catholic Schools—which conducts business

as Bishop O'Gorman Catholic Schools ("Bishop O'Gorman")—and have held this position since

July 2017.

Bishop O'Gorman Catholic Schools and Its Religious Mission

3. Bishop O'Gorman is a consolidated school system within—and constitutes a

ministry of—the Diocese of Sioux Falls.

4. The Diocese of Sioux Falls is one of the two Dioceses of the Catholic Church

located in the State of South Dakota. The Diocese includes 121 local parishes and has been serving

the spiritual and sacramental needs of the Sioux Falls area for over 125 years. The Diocese touches

the lives of the people it serves not only through proclaiming the message of the Gospel but also

through offering various teaching ministries, such as Bishop O'Gorman.

5. The Diocese is led and shepherded by the Most Reverend Donald E. DeGrood, who

was appointed Bishop of Sioux Falls by Pope Francis on February 13, 2020. As the head of the

Diocese, Bishop DeGrood oversees all Diocesan ministries, including Bishop O'Gorman.

6. As the President of Bishop O'Gorman, I directly report to our Board of Directors.

7. The Bishop O'Gorman schools trace their lineage to Dominican sisters who began

teaching classes for schoolchildren in South Dakota in 1905. Since then, the Bishop O'Gorman

schools have been serving students from cities and towns across the southeastern part of South

Dakota and even parts of Minnesota.

- 8. There are eight schools—six elementary schools, a junior high school, and a high school—within the Bishop O'Gorman system.
- 9. Catholic schools exist to instill faith in students and to train them "to live the newness of Christian life in justice and in the holiness of truth." Pope John Paul II, *Message of John Paul II to the National Catholic Educational Association of the United States* (Apr. 16, 1979), https://www.vatican.va/content/john-paul-ii/en/speeches/1979/april/documents/hf_jp-ii_spe_19790416_usa-scuola-catt.html.
- 10. As a Catholic school system, Bishop O'Gorman considers education of students and operation of its schools to be the fulfillment of the Church's mission and the free exercise of our Catholic faith.
- 11. Our mission is "to form a community of faith and learning by promoting a Catholic way of life through Gospel values and academic excellence."
- 12. And our vision is to make our Christ-centered community to be "a financially-viable, world-class education for an increasing number of children." We are happy to see an increasing number of students with whom we can share the love of Christ through their education.
- 13. The Catholic Church teaches that faith and reason complement each other. *The Catechism of the Catholic Church* ¶ 158. God reveals His Truth also through "reason on the human mind" so "[f]aith seeks understanding" in all branches of knowledge. *Id.* ¶ 159.
- 14. For that reason, in Catholic education—and in Bishop O'Gorman's schools—every subject, even those traditionally thought of as "secular"—are illumined by the light of faith in the pursuit of the Truth.

15. Bishop O'Gorman cannot carry out religious and educational mission without our dedicated Catholic teachers who are convinced of the ideals of Catholic education and intent on teaching by word and example.

16. Our teachers play a key role as they strive to become the best examples and role models as Catholics; they bear witness through their actions to Truth and a Catholic way of life. Our teachers are expected to promote Bishop O'Gorman's mission and model in word and action the teachings of the Catholic Church.

17. For example, teachers accompany students to Weekly Mass and Adoration of the Blessed Sacrament. They also say prayers before school begins each day and offer daily prayers and petitions each class period within the classroom.

18. Staff members also play a crucial role in the spiritual life at Bishop O'Gorman. Our Campus Ministry offers for both teachers, staff, and students an opportunity to attend Spiritual retreats. And teachers and staff model the Catholic faith to the students by serving as Extraordinary Ministers of Holy Communion alongside our priests—and alongside the students—during Mass.

19. And of course, our teachers and staff personnel all contractually agree to adhere to a code of conduct consistent with the Catholic faith.

20. Our schools also cannot function and fulfill its religious mission without the dedicated and talented staff who also play key roles. Operating each school, as well as a consolidated school system, can be a difficult task. We depend on our staff to carry out our Catholic mission as much as we depend on our teachers. Every member of our staff is expected to understand and exhibit the core values of our schools, such as Faith, Unity, Excellence, and Integrity.

21. Bishop O'Gorman hires 329 employees. This includes 181 teachers, 18 administrative staff, and 130 support staff.

The Catholic Church's Stance on Vaccination

- 22. As a Catholic apostolate located within the Diocese, Bishop O'Gorman is obligated to obey the Church's teachings on faith and morals as well as the guidance of our Bishop.
- 23. Bishop DeGrood—in conjunction with Bishop Peter M. Muhich of the neighboring Diocese of Rapid City—issued two guidance documents on COVID-19 vaccines, first in December 2020, and again in August 2021.
- 24. In the August 2021 guidance, the Bishops, through their teaching office, explained the following:
 - a. As stated by the Vatican with Papal approval, "practical reason makes evident that vaccination is not, as a rule, a moral obligation."
 - b. The Catholic Church teaches and affirms that "free and informed consent is required prior to . . . vaccination."
 - c. Consent is free "if one has the ability to decline medical intervention following discernment of relevant information and in accord with one's certain conscience, without coercion or fear of punishment."
 - d. Catholics are "bound to follow [their] conscience."
 - e. "There is a general moral duty to refuse medical interventions that are in some way dependent upon cell lines derived from abortions."
 - f. "However, such are permissible if there is a proportional grave need, no alternatives are available, and one makes one's objection known. Even then, a

well-formed conscience might decline such interventions in order to affirm with clarity the value of human life."

- g. "We must not be forced to act contrary to our conscience, *i.e.*, to be compelled to do something we believe to be wrong."
- h. "If [a Catholic] thus comes to the sure conviction in conscience that they should not receive [COVID-19 vaccines], we believe this is a sincere religious belief, as they are bound before God to follow their conscience."
- 25. This statement by the Bishops is, to my knowledge, the first of its kind in the Catholic Diocese of Sioux Falls. Based upon such statement, Bishop O'Gorman has revised policies regarding the vaccination of its students. Bishop O'Gorman currently does not have a policy regarding the vaccination of its teachers and other employees.
- 26. In speaking with Bishop DeGrood, I understand that the Bishops fully appreciate and mourn that the pandemic brought great suffering for many. At the same time, the Bishops stand firm in their conviction that abortion is an unspeakable and grave evil. However, given the current lack of alternative vaccines free of any link to abortion-dependent cell lines, and the remote connection between the COVID-19 vaccines and the initial abortions that gave rise to the cell lines, the Bishops explained that the Church finds it morally permissible to receive the current vaccines under these circumstances.
- 27. It is my further understanding that the Bishops are of the position that this does not detract from the Church's teaching that abortion is a grave evil, that Catholics should avoid abortion-dependent medicine if possible, and that vaccination is a matter of free and conscientious choice.

28. To reiterate, it is my understanding from reading the Bishops' statement and speaking with Bishop DeGrood, that the Diocese of Sioux Falls does not categorically reject or disapprove of the vaccines. Quite to the contrary, the Diocese recognizes the objective benefits shown by the vaccines in scientific study, while also affirming that abortion-free alternatives should be developed and preferred, and that the decision to receive COVID vaccination is "intimate and personal."

The Impact of OSHA's Unlawful Vaccine Mandate

- 29. Bishop O'Gorman hires more than 100 in-person employees.
- 30. On November 5, 2021, the Occupational Safety and Health Administration ("OSHA") published its Emergency Temporary Standard ("ETS") on COVID-19 vaccination, testing, and masking.
- 31. The ETS causes Bishop O'Gorman significant and irreparable injuries by forcing it to administer an onerous vaccination, testing, masking, and record-keeping mandate. Enforcement of the ETS would cause Bishop O'Gorman as an employer to violate its Catholic mission and to go against Catholic teaching.
- 32. It is my understanding that there are unvaccinated employees who work at Bishop O'Gorman.
- 33. We would not dictate our employees' private health decisions by imposing a requirement and thereby violate their religious freedom and the freedom of conscience which they have been given by God. Doing so would violate not only our employees' Catholic beliefs, but also cause Bishop O'Gorman to go against the Church's teaching about consent having to be given freely as was clarified by Bishop DeGrood very recently. A vaccine requirement as stipulated in the ETS would also intrude on the Church's teaching concerning abortion.

- 34. We would either have to bear the testing costs ourselves or pass them onto our employees. Both options substantially burden our religious mission and our faith. If we bear the testing costs, the costs will be significant and diverted from our resources that would otherwise go toward providing Catholic education. If we pass the costs to our employees, this will interfere with our ability to attract great faculty and staff who are needed to carry out our religious mission. This cost burden will certainly burden some of the employees' religious and conscientious decisions to remain unvaccinated. That would be contrary to our own Catholic belief regarding conscience. And we may need to reimburse those employees for testing costs.
- 35. Regardless of who bears the cost of testing, our religious mission and beliefs will be substantially and significantly burdened.
- 36. If OSHA's regulatory requirements mandate us to keep records to demonstrate compliance with the ETS, this could result in a significant cost to achieve compliance. This would mean that Bishop O'Gorman's administrative and school staff will need to devote precious time, personnel, and resources to collect, verify, and record vaccination and/or testing information. Because such information will contain our employees' sensitive health information, such an endeavor will involve an implementation of careful policies and training. We estimate this record-keeping requirement will entail significant additional resources, time and expense for Bishop O'Gorman.
- 37. If the ETS's weekly testing and masking requirements apply to Bishop O'Gorman, we also anticipate that our employees will be forced to devote a significant amount of time and effort to comply with the weekly testing requirement.

- 38. Even the slight loss of employee time and Bishop O'Gorman's expenditure of these additional compliance costs detract from Bishop O'Gorman's core mission to provide Catholic education to the students within the Sioux Falls area.
- 39. Furthermore, OSHA's threat of punitive fines may force Bishop O'Gorman to terminate employees who do not submit to the mandates of the ETS. Again, Bishop O'Gorman hires its teachers and staff to support its mission to provide Catholic education to our students. And we vet and hire teachers with this mission in mind. The ETS could force Bishop O'Gorman to have to terminate excellent, mission-driven employees.
- 40. The ETS will interfere with—and irreparably injure—our ability to select teachers of Catholic faith and staff within our Catholic education system. Without good teachers and staff who are faithful to the Catholic faith, Bishop O'Gorman cannot carry out its mission to provide Catholic education within the Diocese of Sioux Falls. Nevertheless, the ETS will place a significant burden on our ability to hire good Catholic teachers just because they have chosen to remain unvaccinated for a variety of reasons. Forced to vaccinate or undergo unjust accommodation procedures, Bishop O'Gorman would very probably lose highly-qualified staff members who are essential to Bishop O'Gorman's teaching faculty as those individuals would choose to honor their well formed consciences rather than to submit to the burdensome requirements. In other words, the ETS will hamper Bishop O'Gorman's religious mission.
- 41. As a religious organization, Bishop O'Gorman strongly believes that it—working with the Diocesan leadership—should have autonomy in hiring faculty and staff.

Pursuant to 28 U.S.C. § 1746, I declare that the foregoing is true and correct.

Executed on November 5, 2021

Kyle L. Groos

Appellate Case: 21-3494 Page: 9 Date Filed: 11/05/2021 Entry ID: 5095038

DECLARATION OF J. MICHAEL SMITH

- I, J. Michael Smith, swear or affirm as follows:
 - 1. I am over the age of 21 years and competent to testify to the matters attested herein.
- 2. I am the President of Home School Legal Defense Association ("HSLDA") and have held this position since 2000.
- 3. HSLDA is a 501(c)(3) nonprofit corporation incorporated in the District of Columbia.
- 4. HSLDA is a non-profit, public interest law firm that exists to advance and protect the freedom to homeschool, serving any parent who has the legal right to homeschool.
- 5. HSLDA provides legal protection for the right to homeschool, as well as educational support and community for homeschooling families. HSLDA advocates for homeschool freedom in courts around the country, state legislatures, and in the public arena.
- 6. HSLDA is a Christian organization guided by a Statement of Faith that all Board Members and employees must assent to.

HSLDA's Membership

- 7. HSLDA has almost 108,000 member families who reside in all 50 states.
- 8. HSLDA has approximately 750 member families in Arkansas; 1,200 member families in Iowa; 2,300 member families in Minnesota; 3,900 member families in Missouri, 1,000 member families in Nebraska; 470 member families in North Dakota; and 500 member families in South Dakota.
- 9. All of these member families can call on HSLDA for free assistance surrounding homeschool related legal issues as part of their membership.

The Impact of OSHA's Unlawful Vaccine Mandate

- 10. HSLDA employs over 200 full- and part-time employees.
- 11. Our employees currently consist of 95 full-time employees and 109 part-time employees. Over 100 of these employees come into the office at least once a week.
- 12. Because HSLDA employs more than 100 in-person staff members, it is covered by Occupational Safety and Health Administration ("OSHA")'s recently issued Emergency Temporary Standard ("ETS").
- 13. Forcing HSLDA to administer the vaccination, testing, and masking mandates in the ETS will cause significant and irreparable injuries to HSLDA.
- 14. HSLDA believes it is not our place to second-guess the medical decisions of our employees, nor force employees to make or change certain medical decisions.
- 15. It is my understanding that there are both vaccinated and unvaccinated employees who work at HSLDA.
- 16. While HSLDA has implemented various measures to mitigate and monitor the presence of COVID-19 at the workplace, it has not mandated vaccination on its staff.
- 17. We would not mandate vaccination and dictate our employees' private health choices that implicate their conscience and religious beliefs.
- 18. Following the well-established position within the Christian tradition, HSLDA regards liberty of conscience as a core dimension of theological and personal integrity.
- 19. If the ETS mandates us to administer the weekly testing requirements, we expect that the cost would be significant.
- 20. We would either have to bear the testing costs ourselves or pass them onto our employees. Both options substantially burden our mission and guiding faith. If we bear the testing costs, the costs will be significant and diverted from our resources that would otherwise go toward

legal or support services for our members. If we pass the costs to our employees, this will interfere with our ability to attract qualified staff who are needed to carry out our mission. This cost burden will certainly burden some of the employees' religious and conscientious decisions to remain unvaccinated. That would be contrary to our own Christian belief regarding conscience. And we may need to reimburse those employees for testing costs.

- 21. Regardless of who bears the cost of testing, our religious mission and beliefs will be substantially and significantly burdened.
- 22. If OSHA's regulatory requirements mandate us to keep records to demonstrate compliance with the ETS, this could result in a significant cost to achieve compliance. This would mean that HSLDA's administrative staff will need to devote precious time, personnel, and resources to collect, verify, and record vaccination and/or testing information. Because such information will contain our employees' sensitive health information, such an endeavor will involve an implementation of careful policies and training. We estimate this record-keeping requirement will entail significant additional resources, time, and expense for HSLDA.
- 23. Even the slight loss of employee time and resources—to enforce the vaccination, testing, and/or masking mandates—will detract from HSLDA's mission of tirelessly advocating for the right to homeschool and encouraging our member families who do so.
- 24. Furthermore, OSHA's threat of punitive fines may force HSLDA to terminate employees who do not submit to, or comply with, the mandates of the ETS.
- 25. The ETS will interfere with—and irreparably injure—HSLDA's ability to select and retain employees who share our mission. If HSLDA is required to enforce a mandate that all employees vaccinate, test, and/or mask, it is my understanding that a number of our employees

will quit. These employees have religious objections to vaccination and do not want to wear a scarlet letter. Without good staff members, HSLDA will not be able to carry out its mission.

26. As a religious employer, HSLDA strongly believes that it should have autonomy in hiring and staff.

Pursuant to 28 U.S.C. § 1746, I declare that the foregoing is true and correct.

Executed on 11/5, 2021

5

DECLARATION OF DR. JAYANTA BHATTACHARYA

- I, Dr. Jayanta Bhattacharya, declare as follows:
 - 1. I am an adult of sound mind and make this statement voluntarily, based upon my knowledge, education, and experience.

EXPERIENCE & CREDENTIALS

- 2. I am a former Professor of Medicine and current Professor of Health Policy at Stanford University School of Medicine and a research associate at the National Bureau of Economic Research. I am also Director of Stanford's Center for Demography and Economics of Health and Aging. I hold an M.D. and Ph.D. from Stanford University. I have published 154 scholarly articles in peer-reviewed journals in the fields of medicine, economics, health policy, epidemiology, statistics, law, and public health, among others. My research has been cited in the peer-reviewed scientific literature more than 11,800 times. My curriculum vitae is attached to this declaration as Exhibit A.
- 3. I have dedicated my professional career to the analysis of health policy, including infectious disease epidemiology and policy, and the safety and efficacy of medical interventions. I have studied extensively and commented publicly on the necessity and safety of vaccine requirements for those who have contracted and recovered from COVID-19 (individuals who have "natural immunity"). I am intimately familiar with the emergent scientific and medical literature on this topic and pertinent government policy responses to the issue both in the United States and abroad.
- 4. My assessment of vaccine immunity is based on studies related to the efficacy and safety of the one vaccine to receive full approval from the Food and Drug Administration (FDA) and the two vaccines for which the FDA has granted Emergency Use Authorization (EUA) for use in the United States. These include two mRNA-technology vaccines (manufactured

Appellate Case: 21-3494 Page: 1 Date Filed: 11/05/2021 Entry ID: 5095038

by Pfizer-BioNTech and Moderna) and an adenovirus-vector vaccine technology (manufactured by Johnson & Johnson). Of those, the Pfizer vaccine, also known as Comirnaty, has full FDA approval.

- 5. I have not and will not receive any financial or other compensation to prepare this Declaration or to testify in this case. Nor have I received compensation for preparing declarations or reports or for testifying in *any* other case related to the COVID-19 pandemic or any personal or research funding from any pharmaceutical company. My participation here has been motivated solely by my commitment to public health, just as my involvement in other cases has been.
- 6. I have been asked to provide my opinion on several matters:
 - Whether, based on the current medical and scientific knowledge, immunity after
 COVID recovery (sometimes referred to as natural immunity) is categorically inferior
 to vaccine immunity to prevent reinfection and transmission of the SARS-CoV-2 virus;
 - Whether, based on the existing medical and scientific understanding of SARS-CoV-2 transmission and recovery, there is any categorical distinction between natural immunity and vaccine immunity.
- 7. I can summarize my opinions briefly. The scientific evidence strongly indicates that the recovery from COVID disease provides strong and lasting protection against severe disease if reinfected, at least as good and likely better than the protection offered by the COVID vaccines. While the COVID vaccines are effective at protecting vaccinated individuals against severe disease, they provide only short-lasting and limited protection versus infection and disease transmission. Requiring vaccines for COVID recovered patients thus

provides only a limited benefit while exposing them to the risks associated with the vaccination.

OPINIONS

- I. <u>Natural Immunity Provides Durable Protection Against Reinfection and Against Severe Outcomes If Reinfected; COVID-19 Vaccines Provide Limited Protection Against Infection but Durable Protection Against Severe Outcomes if Infected.</u>
 - 8. Both vaccine-mediated immunity and natural immunity after recovery from COVID infection provide extensive protection against severe disease from subsequent SARS-CoV-2 infection. There is no reason to presume that vaccine immunity provides a higher level of protection than natural immunity. Since vaccines arrived one year after the disease, there is stronger evidence for long-lasting immunity from natural infection than from the vaccines.
 - 9. Both types of immunity are based on the same basic immunological mechanism—stimulating the immune system to generate an antibody response. In clinical trials, the efficacy of those vaccines was initially tested by comparing the antibody levels in the blood of vaccinated individuals to those who had natural immunity. Later Phase III studies of the vaccines established 94%+ clinical efficacy of the mRNA vaccines against severe COVID illness. 1,2 A Phase III trial showed 85% efficacy for the Johnson & Johnson adenovirus-

¹ Baden, L. R., El Sahly, H. M., Essink, B., Kotloff, K., Frey, S., Novak, R., Diemert, D., Spector, S. A., Rouphael, N., Creech, C. B., McGettigan, J., Khetan, S., Segall, N., Solis, J., Brosz, A., Fierro, C., Schwartz, H., Neuzil, K., Corey, L., Zaks, T. for the COVE Study Group (2021). Efficacy and Safety of the mRNA-1273 SARS-CoV-2 Vaccine. *The New England Journal of Medicine*, *384*(5), 403-416. doi: 10.1056/NEJMoa2035389

² Polack, F. P., Thomas, S. J., Kitchin, N., Absalon, J., Gurtman, A., Lockhart, S., Perez, J. L., Pérez Marc, G., Moreira, E. D., Zerbini, C., Bailey, R., Swanson, K. A., Roychoudhury, S., Koury, K., Li, P., Kalina, W. V., Cooper, D., Frenck, R. W. Jr., Hammitt, L. L., Gruber, W. C. (2020). Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine. *The New England Journal of Medicine*, 387(27), 2603-2615. doi: 10.1056/NEJMoa2034577

based vaccine against severe disease.3

10. Immunologists have identified many immunological mechanisms of immune protection after recovery from infections. Studies have demonstrated prolonged immunity with respect to memory T and B cells,⁴ bone marrow plasma cells,⁵ spike-specific neutralizing antibodies,⁶ and IgG+ memory B cells⁷ following naturally acquired immunity.

³ Sadoff, J., Gray, G., Vandebosch, A., Cárdenas, V., Shukarev, G., Grinsztejn, B., Goepfert, P. A., Truyers, C., Fennema, H., Spiessens, B., Offergeld, K., Scheper, G., Taylor, K. L., Robb, M. L., Treanor, J., Barouch, D. H., Stoddard, J., Ryser, M. F., Marovich, M. A., Douoguih, M. for the ENSEMBLE Study Group. (2021). Safety and Efficacy of Single-Dose Ad26.COV2.S Vaccine against Covid-19. *The New England Journal of Medicine*, 384(23), 2187-2201. doi: 10.1056/NEJMoa2101544

⁴ Dan, J. M., Mateus, J., Kato, Y., Hastie, K. M., Yu, E. D., Faliti, C. E., Grifoni, A., Ramirez, S. I., Haupt, S., Frazier, A., Nakao, C., Rayaprolu, V., Rawlings, S. A., Peters, B., Krammer, F., Simon, V., Saphire, E. O., Smith, D. M., Weiskopf, D., Crotty, S. (2021). Immunological memory to SARS-CoV-2 assessed for up to 8 months after infection. *Science*, *371*, 1-13. doi: 10.1126/science.abf4063 (finding that memory T and B cells were present up to eight months after infection, noting that "durable immunity against secondary COVID-19 disease is a possibility in most individuals").

⁵ Turner, J. S., Kim, W., Kalaidina, E., Goss, C. W., Rauseo, A. M., Schmitz, A. J., Hansen, L., Haile, A., Klebert, M. K., Pusic, I., O'Halloran, J. A., Presti, R. M. & Ellebedy, A. H. (2021). SARS-CoV-2 infection induces long-lived bone marrow plasma cells in humans. *Nature*, 595(7867), 421-425. doi: 10.1038/s41586-021-03647-4 (study analyzing bone marrow plasma cells of recovered COVID-19 patients reported durable evidence of antibodies for at least 11 months after infection, describing "robust antigen-specific, long-lived humoral immune response in humans"); Callaway, E. (2021, May 26). Had COVID? You'll probably make antibodies for a lifetime.

Nature. https://www.nature.com/articles/d41586-021-01442-9#:~:text=Many%20people%20who%20have%20been,recovered%20from%20COVID%2D191 ("The study provides evidence that immunity triggered by SARS-CoV-2 infection will be extraordinarily long-lasting" and "people who recover from mild COVID-19 have bone-marrow cells that can churn out antibodies for decades").

⁶ Ripperger, T. J., Uhrlaub, J. E., Watanabe, M., Wong, R., Castaneda, Y., Pizzato, H. A., Thompson, M. R., Bradshaw, C., Weinkauf, C. C., Bime, C., Erickson, H. L., Knox, K., Bixby, B., Parthasarathy, S., Chaudhary, S., Natt, B., Cristan, E., El Aini, T., Rischard, F., Bhattacharya, D. (2020). Orthogonal SARS-CoV-2 serological assays enable surveillance of low-prevalence communities and reveal durable humor immunity. *Immunity*, *53*(5), 925-933. doi: 10.1016/j.immuni.2020.10.004 (study finding that spike and neutralizing antibodies remained detectable 5-7 months after recovering from infection).

⁷ Cohen, K. W., Linderman, S. L., Moodie, Z., Czartoski, J., Lai, L., Mantus, G., Norwood, C., Nyhoff, L. E., Edara, V. V., Floyd, K., De Rosa, S. C., Ahmed, H., Whaley, R., Patel, S. N.,

- 11. Multiple extensive, peer-reviewed studies comparing natural and vaccine immunity have now been published. These studies overwhelmingly conclude that natural immunity provides equivalent or greater protection against severe infection than immunity generated by mRNA vaccines (Pfizer and Moderna).
- 12. Specifically, studies confirm the efficacy of natural immunity against reinfection of COVID-19⁸ and show that the vast majority of reinfections are less severe than first-time

Prigmore, B., Lemos, M. P., Davis, C. W., Furth, S., O'Keefe, J., McElrath, M. J. (2021). Longitudinal analysis shows durable and broad immune memory after SARS-CoV-2 infection with persisting antibody responses and memory B and T cells. *medRxiv*, Preprint. (study of 254 recovered COVID patients over 8 months "found a predominant broad-based immune memory response" and "sustained IgG+ memory B cell response, which bodes well for rapid antibody response upon virus re-exposure." "Taken together, these results suggest that broad and effective immunity may persist long-term in recovered COVID-19 patients").

⁸ Shrestha, N. K., Burke, P. C., Nowacki, A. S., Terpeluk, P. & Gordon, S. M. (2021). Necessity of COVID-19 vaccination in previously infected individuals. medRxiv, Preprint. doi: 10.1101/2021.06.01.21258176 ("not one of the 1359 previously infected subjects who remained unvaccinated had a SARS-CoV-2 infection over the duration of the study" and concluded that those with natural immunity are "unlikely to benefit from COVID-19 vaccination"); Perez, G., Banon, T., Gazit, S., Moshe, S. B., Wortsman, J., Grupel, D., Peretz, A., Tov, A. B., Chodick, G., Mizrahi-Reuveni, M., & Patalon, T. (2021). A 1 to 1000 SARS-CoV-2 reinfection proportion in members of a large healthcare provider in Israel: A preliminary report. medRxiv, Preprint. 10.1101/2021.03.06.21253051 (Israeli study finding that approximately 1/1000 of participants were reinfected); Bertollini, R., Chemaitelly, H., Yassine, H. M., Al-Thani, M. H., Al-Khal, A., & Abu-Raddad, L. J. (2021). Associations of vaccination and of prior infection with positive PCR test results for SARS-CoV-2 in airline passengers arriving in Qatar. JAMA, 326(2), 185-188. doi: 10.1001/jama.2021.9970 (study of international airline passengers arriving in Qatar found no statistically significant difference in risk of reinfection between those who had been vaccinated and those who had previously been infected); Pilz, S., Chakeri, A., Ioannidis, J. P. A., Richter, L., Theiler-Schwetz, V., Trummer, C., Krause, R., Allerberger, F. (2021). SARS-CoV-2 re-infection risk in Austria. European Journal of Clinical Investigation, 51(4), 1-7. doi: 10.1111/eci.13520 (previous SARS-CoV-2 infection reduced the odds of re-infection by 91% compared to first infection in the remaining general population); Breathnach, A. S., Duncan, C. J. A., El Bouzidi, K., Hanrath, A. T., Payne, B. A. I., Randell, P. A., Habibi, M. S., Riley, P. A., Planche, T. D., Busby, J. S., Sudhanva, M., Pallett, S. J. C. & Kelleher, W. P. (2021). Prior COVID-19 protects against reinfection, even in the absence of detectable antibodies. The Journal of Infection, 83(2), 237-279. doi: 10.1016/j.jinf.2021.05.024 (0.86% of previously infected population in London became reinfected); Tarke, A., Sidney, J., Methot, N., Yu, E. D., Zhang, Y., Dan, J. M., Goodwin, B., Rubiro, P., Sutherland, A., Wang, E., Frazier, A., Ramirez, S. I., Rawlings, S. A., Smith, D. M., da Silva Antunes, R., Peters, B., Scheuermann, R. H., Weiskopf, D., Crotty, S., Grifoni, A. &

infections.⁹ For example, an Israeli study of approximately 6.4 million individuals demonstrated that natural immunity provided equivalent if not better protection than vaccine immunity in preventing COVID-19 infection, morbidity, and mortality.¹⁰ Of the 187,549 unvaccinated persons with natural immunity in the study, only 894 (0.48%) were reinfected; 38 (0.02%) were hospitalized, 16 (0.008%) were hospitalized with severe disease, and only one died, an individual over 80 years of age. Another study, analyzing

Sette, A. (2021). Impact of SARS-CoV-2 variants on the total CD4⁺ and CD8⁺ T cell reactivity in infected or vaccinated individuals, *Cell Reports Medicine* 2(7), 100355 (an examination of the comparative efficacy of T cell responses to existing variants from patients with natural immunity compared to those who received an mRNA vaccine found that the T cell responses of both recovered COVID patients and vaccines were effective at neutralizing mutations found in SARS-CoV-2 variants).

⁹ Abu-Raddad, L. J., Chemaitelly, H., Coyle, P., Malek, J. A., Ahmed, A. A., Mohamoud, Y. A., Younuskunju, S., Ayoub, H. H., Kanaani, Z. A., Kuwari, E. A., Butt, A. A., Jeremijenko, A., Kaleeckal, A. H., Latif, A. N., Shaik, R. M., Rahim, H. F. A., Nasrallah, G. K., Yassine, H. M., Al Kuwari, M. G., Al Romaihi, H. E., Al-Thani, M. H., Al Khal, A., Bertollini, R. (2021). SARS-CoV-2 antibody-positivity protects against reinfection for at least seven months with 95% efficacy. EClinical Medicine, 35, 1-12. doi: 10.1016/j.eclinm.2021.100861 (finding that of 129 reinfections from a cohort of 43,044, only one reinfection was severe, two were moderate, and none were critical or fatal); Hall, V. J., Foulkes, S., Charlett, A., Atti, A., Monk, E. J. M., Simmons, R., Wellington, E., Cole, M. J., Saei, A., Oguti, B., Munro, K., Wallace, S., Kirwan, P. D., Shroti, M., Vusirikala, A., Rokadiya, S., Kall, M., Zambon, M., Ramsay, M., Hopkins, S. (2021). SARS-CoV-2 infection rates of antibody-positive compared with antibody-negative health-care workers in England: a large, multicentre, prospective cohort study. The Lancet, 397(10283), 1459-1469. doi: 10.1016/S0140-6736(21)00675-9 (finding "a 93% lower risk of COVID-19 symptomatic infection... [which] show[s] equal or higher protection from natural infection, both for symptomatic and asymptomatic infection"); Hanrath, A. T., Payne, B., A., I., & Duncan, C. J. A. (2021). Prior SARS-CoV-2 infection is associated with protection against symptomatic reinfection. The Journal of Infection, 82(4), e29-e30. doi: 10.1016/j.jinf.2020.12.023 (examined reinfection rates in a cohort of healthcare workers and found "no symptomatic reinfections" among those examined and that protection lasted for at least 6 months).

¹⁰ Goldberg, Y., Mandel, M., Woodbridge, Y., Fluss, R., Novikov, I., Yaari, R., Ziv, A., Freedman, L., & Huppert, A. (2021). Protection of previous SARS-CoV-2 infection is similar to that of BNT162b2.vaccine protection: A three-month nationwide experience from Israel. *medRxiv*, Preprint. doi: 10.1101/2021.04.20.21255670

data from Italy found that only 0.31% of COVID-recovered patients experienced a reinfection within a year after the initial infection.¹¹

13. Variants do not escape the immunity provided by prior infection with the pre-variant virus or vaccination. ^{12, 13, 14} This is true of the delta variant as well. In a study of a large population of patients in Israel, *vaccinated* people who had not been previously infected had 13 times higher odds of experiencing a breakthrough infection with the Delta variant than patients who had recovered from COVID but were never vaccinated. ¹⁵ They had 27 times higher odds of experiencing subsequent symptomatic COVID disease and 7 times higher odds of hospitalization. The design of this Israeli study was particularly strong – it tracked large cohorts of people over time from the time of vaccination or initial infection, and thus carefully distinguished the effect of time since initial exposure or vaccination in

¹¹ Vitale, J., Mumoli, N., Clerici, P., de Paschale, M., Evangelista, I., Cei, M. & Mazzone, A. (2021). Assessment of SARS-CoV-2 reinfection 1 year after primary infection in a population in Lombardy, Italy. *JAMA Internal Medicine*, *181*(10), 1407-1409. doi: 10.1001/jamainternmed.2021.2959

¹² Tarke, A., Sidney, J., Methot, N., Yu, E. D., Zhang, Y., Dan, J. M., Goodwin, B., Rubiro, P., Sutherland, A., Wang, E., Frazier, A., Ramirez, S. I., Rawlings, S. A., Smith, D. M., da Silva Antunes, R., Peters, B., Scheuermann, R. H., Weiskopf, D., Crotty, S., Grifoni, A. & Sette, A. (2021). Impact of SARS-CoV-2 variants on the total CD4⁺ and CD8⁺ T cell reactivity in infected or vaccinated individuals, *Cell Reports Medicine 2*, 100355.

¹³ Wu, K., Werner, A. P., Moliva, J. I., Koch, M., Choi, A., Stewart-Jones, G. B. E., Bennett, H., Boyoglu-Barnum, S., Shi, W., Graham, B. S., Carfi, A., Corbett, K. S., Seder, R. A. & Edwards, D. K. (2021). mRNA-1273 vaccine induces neutralizing antibodies against spike mutants from global SARS-CoV-2 variants. *bioRxiv*, Preprint. doi: 10.1101/2021.01.25.427948

¹⁴ Redd, A. D., Nardin, A., Kared, H., Bloch, E. M., Pekosz, A., Laeyendecker, O., Abel, B., Fehlings, M., Quinn, T. C. & Tobian, A. A. (2021). CD8⁺ T-cell responses in COVID-19 convalescent individuals target conserved epitopes from multiple prominent SARS-CoV-2 circulating variants. *Open Forum Infectious Diseases* 8(7), ofab143.

¹⁵ Gazit, S., Shlezinger, R., Perez, G., Lotan, R., Peretz, A., Ben-Tov, A., Cohen, D., Muhsen, K., Chodick, G. & Patalon, T. (2021). Comparing SARS-CoV-2 natural immunity to vaccine-induced immunity: Reinfections versus breakthrough infections. *medRxiv*, Preprint. doi: 10.1101/2021.08.24.21262415

- estimating its effect. This is important because both vaccine-mediated and infectionmediated protection against subsequent infection diminish with time.
- 14. In summary, the overwhelming conclusion of the pertinent scientific literature is that natural immunity is at least as effective against subsequent reinfection as even the most effective vaccines.
- 15. Furthermore, based on such evidence, many scientists have concluded that natural protection against severe disease after COVID recovery is likely to be long-lasting. A survey article published on June 30, 2021, in the *British Medical Journal* concluded, "[t]here is reason to think that immunity could last for several months or a couple of years, at least, given what we know about other viruses and what we have seen so far in terms of antibodies in patients with COVID-19 and in people who have been vaccinated." ¹⁶
- 16. These findings of highly durable natural immunity should not be surprising, as they hold for SARS-CoV-1 (the virus that causes SARS) and other respiratory viruses. According to a paper published in *Nature* in August 2020, 23 patients who had recovered from SARS-CoV-1 still possess CD4 and CD8 T cells 17 years after infection during the 2003 epidemic. ¹⁷ A *Nature* paper from 2008 found that 32 people born in 1915 or earlier still retained some level of immunity against the 1918 flu strain—some 90 years later. ¹⁸

¹⁶ Baraniuk, C. (2021). How long does covid-19 immunity last? *The British Medical Journal*, *373*, 1-3. doi: 10.1136/bmj.n1605.

¹⁷ Le Bert, N., Tan, A. T., Kunasegaran, K., Tham, C. Y. L., Hafezi, M., Chia, A., Chng, M. H. Y., Lin, M., Tan, N., Linster, M., Chia, W. N., Chen, M. I. C., Wang, L. F., Ooi, E. E., Kalimuddin, S., Tambyah, P. A., Low, J. G. H., Tan, Y. J. & Bertoletti, A. (2020). SARS-CoV-2-specific T cell immunity in cases of COVID-19 and SARS, and uninfected control. *Nature*, *584*, 457-462. doi: 10.1038/s41586-020-2550-z

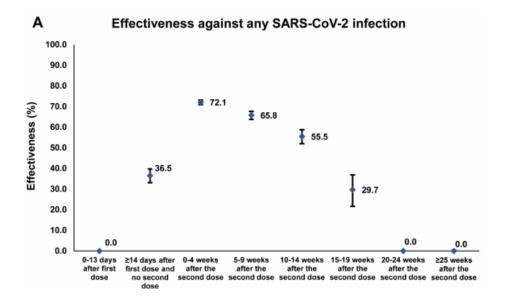
¹⁸ Yu, X., Tsibane, T., McGraw, P. A., House, F. S., Keefer, C. J., Hicar, M. D., Tumpey, T. M., Pappas, C., Perrone, L. A., Martinez, O., Stevens, J., Wilson, I. A., Aguilar, P. V., Altschuler,

- 17. In contrast to the concrete findings regarding the robust durability of natural immunity, it is yet unclear in the scientific literature how long-lasting vaccine-induced immunity will be. Notably, the researchers argue that they can best surmise the predicted durability of vaccine immunity by looking at the expected durability of natural immunity. ¹⁹
- 18. A recent study from Qatar by Chemaitelly and colleagues, which tracked 927,321 individuals for six months after vaccination concluded that the Pfizer vaccine's "induced protection against infection appears to wane rapidly after its peak right after the second dose, but it persists at a robust level against hospitalization and death for at least six months following the second dose."²⁰
- 19. The key figures from the Qatari study are reproduced immediately below. Panel A shows that vaccine mediated protection against infection peaks at 72.1% zero to four weeks after the second dose, and then declines to 0%, 20 weeks after the second dose. According to this result, vaccines only protect against infection (and therefore disease spread) for a short period of time after the second dose of the mRNA vaccines.

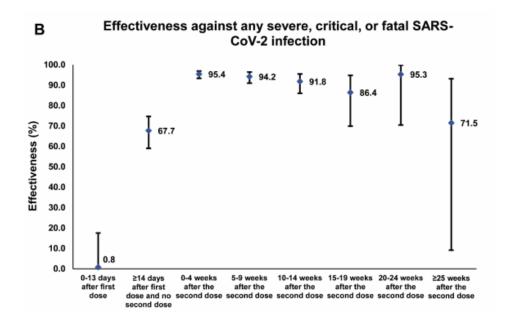
E. L., Basler, C. F., & Crowe Jr., J. E. (2008). Neutralizing antibodies derived from the B cells of 1918 influenza pandemic survivors. *Nature*, 455, 532-536. doi: 10.1038/nature07231

¹⁹ Ledford, H. (2021). Six months of COVID vaccines: What 1.7 billion doses have taught scientists. *Nature*, *594*(7862), 164-167. doi: 10.1038/d41586-021-01505-x (study notes that "Six months is not much time to collect data on how durable vaccine responses will be. . . . In the meantime some researchers are looking to natural immunity as a guide.").

²⁰ Chemaitelly, H., Tang, P., Hasan, M. R., Al Mukdad, S., Yassine, H. M., Benslimane, F. M., Khatib, H. A. A., Coyle, P., Ayoub, H. H., Kanaani, Z. A., Kuwari, E. A., Jeremijenko, A., Kaleeckal, A. H., Latif, A. N., Shaik, R. M., Rahim, H. F. A., Nasrallah, G. K., Kuwari, M. G. A., Romaihi, H. E. A., Abu-Raddad, L. J. (2021). Waning of BNT162b2 vaccine protection against SARS-CoV-2 infection in Qatar. *medRxiv*, Preprint. doi: 10.1101/2021.08.25.21262584



20. On the other hand, Panel B shows that protection versus severe disease is long lasting after vaccination—even though the person will no longer be fully protected against infection and, presumably, disease spread. At 20-24 weeks after the second dose, the vaccine remains 95.3% efficacious versus severe disease. While it appears to dip after 25 weeks to 71.5% efficacy, the confidence interval is so wide that it is consistent with no decrease whatsoever even after 25 weeks.



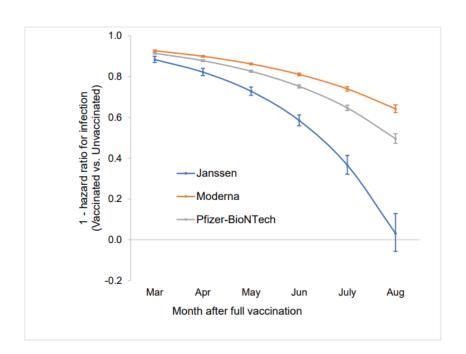
21. The Qatari study is 100 Adjusted estimated vaccine effectiveness (%) outlier. A large study in 90 80 California tracked 70 60 infection rates for nearly 5 50 Age at index, years 40 12-15* million patients vaccinated 30 16-44 45-64 20 with two doses of the Pfizer ≥65 10 All ≥12 mRNA vaccine. The study В tracked both SARS-CoV-2 100 Adjusted estimated vaccine effectiveness (%) infections as well as COVID-90 80 19 related hospitalizations. 70 60 figure immediately The 50 40 below plots the trend in 30 20 vaccine efficacy over time 10 for different age groups in 1 to <2 2 to <3 3 to <4 4 to <5 ≥5 Time since full vaccination (months) the population cohort. Panel

A on the right plots effectiveness versus SARS-CoV-2 *infections*. ²¹ Though the drop in effectiveness is not as steep as in the Qatari study, there is nevertheless a sharp drop. While in the first month, vaccine effectiveness is near 90% for all age-groups, by month 5, it drops to nearly 50% for all the groups. By contrast, **Panel B** plots vaccine efficacy versus

²¹ Tartof SY, Slezak JM, Fischer H, Hong V, Ackerson BK, Ranasinghe ON, Frankland TB, Ogun OA, Zamparo JM, Gray S, Valluri SR, Pan K, Angulo FJ, Jodar L, McLaughlin JM. Effectiveness of mRNA BNT162b2 COVID-19 vaccine up to 6 months in a large integrated health system in the USA: a retrospective cohort study. *Lancet*. 2021 Oct 16;398(10309):1407-1416. doi: 10.1016/S0140-6736(21)02183-8. Epub 2021 Oct 4. PMID: 34619098; PMCID: PMC8489881.

hospitalizations. It remains high with no decline over time –near 90% throughout the period. The vaccine provides durable private protection versus severe disease, but declining protection versus infection (and hence transmission).

22. Another recent study tracked 620,000 vaccinated US veterans to measure breakthrough infections for the three vaccines in common use in the US.²² Like the other studies, the authors of the study found a sharp decline in vaccine effectiveness versus infection. Five months after vaccination, the effectiveness of the J&J vaccine dropped from ~90% to less than 10%; the Pfizer vaccine dropped from ~90% to ~50%; and the Moderna dropped from ~90% to ~65%. The figure on this page tracks the decline in effectiveness of the vaccines against infection over time documented in this study. This study corroborates yet another study that documented declining vaccine efficacy in the first three months after vaccination



²² Cohn BA, Cirillo PM, Murphy CC, et al. Breakthrough SARS-CoV-2 Infections in 620,000 U.S. Veterans, February 1, 2021 to August 13, 2021. medRxiv. October 14, 2021. https://doi.org/10.1101/2021.10.13.21264966;

against disease transmission in the era of the Delta variant.²³

23. Yet another study conducted in Wisconsin confirmed that vaccinated individuals can shed infectious SARS-CoV-2 viral particles.²⁴ The authors analyzed nasopharyngeal samples to check whether patients showed evidence of infectious viral particles. They found that vaccinated individuals were at least as likely as unvaccinated individuals to be shedding live virus. They concluded:

Combined with other studies these data indicate that vaccinated and unvaccinated individuals infected with the Delta variant might transmit infection. Importantly, we show that infectious SARS-CoV-2 is frequently found even in vaccinated persons.

24. Indeed, the CDC recognizes the importance of natural immunity in its updated science brief analyzing the difference in immunity from infection-induced and vaccine-induced immunity. The CDC noted that "confirmed SARS-CoV-2 infection decreased risk of subsequent infection by 80–93% for at least 6–9 months," with some studies showing "slightly higher protective effects (89-93%)." It also noted that "researchers have predicted that the immune response following infection would continue to provide at least 50% protection against reinfection for 1–2 years following initial infection with SARS-CoV-2 or vaccination. This would be similar to what is observed with seasonal coronaviruses."

²³ Eyre, D. W., Taylor, D., Purver, M., Chapman, D., Fowler, T., Pouwels, K. B., Walker, A. S. & Peto, T. E. A. (2021). The impact of SARS-CoV-2 vaccination on Alpha & Delta variant transmission. *medRxiv*, Preprint. doi: 10.1101/2021.09.28.21264260

²⁴ Riemersma, K. K., Grogan, B. E., Kita-Yarbro, A., Halfmann, P. J., Segaloff, H. E., Kocharian, A., Florek, K. R., Westergaard, R., Bateman, A., Jeppson, G. E., Kawaoka, Y., O'Connor, D. H., Friedrich, T. C., & Grande, K. M. (2021). Shedding of infectious SARS-CoV-2 despite vaccination. *medRxiv*, Preprint. doi: 10.1101/2021.07.31.21261387

²⁵ CDC, Science Brief: SARS-CoV-2 Infection-Induced and Vaccine-Induced Immunity (updated Oct. 29, 2021), https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/vaccine-induced-immunity.html#anchor_1635539757101

- 25. The CDC science brief does claim that vaccine-induced immunity is stronger than immunity from natural infection.²⁶ The study the CDC relies on to support this claim is not determinative for several reasons.²⁷ First, its result is contrary to the weight of other evidence, as set forth above. Second, the study compared hospitalization of those infected—and had natural immunity—90-225 days after their infection while against those who had completed their RNA vaccine regime 45-213 days before reinfection. Because immunity—regardless of how gained—wanes over time, the failure to adequately compare like periods means that the study's conclusions are biased in favor of vaccine-induced immunity. Indeed, the study admits this weakness. Third, the study design itself does not permit it to address the critical question of interest – whether COVID-recovery without vaccination or vaccination without COVID-recovery provides stronger protection against COVID-related hospitalization. The study analyzes only patients who are already in the hospital. To obtain an accurate answer to the question of interest, it would need to include and analyze patients before entering the hospital. As it is, the study implicitly and incorrectly assumes that the set of hospitalized patients with COVID-like symptoms is representative of the population at large, which is untrue.
- 26. In summary, the evidence to date strongly suggests that while vaccines—like natural immunity—protect against severe disease, they, unlike natural immunity, provide only short-lasting protection against subsequent infection and disease spread. In short, there is

 $^{^{26}}$ Id

²⁷ Bozio CH, Grannis SJ, Naleway AL, et al. Laboratory-Confirmed COVID-19 Among Adults Hospitalized with COVID-19–Like Illness with Infection-Induced or mRNA Vaccine-Induced SARS-CoV-2 Immunity — Nine States, January–September 2021. MMWR Morb Mortal Wkly Rep. ePub: 29 October 2021.

no medical or scientific reason to believe that vaccine immunity will prove longer-lasting immunity than natural immunity, much less more durable immunity.

- II. The CDC's Recommendation for Vaccination of Recovered COVID Patients Applies with Equal Force to Those Who Have Been Previously Vaccinated, Whose Protection Against Infection Wanes Within a Few Months After Vaccination.
 - 27. The CDC, in the Frequently Asked Questions (FAQ) section of its website encouraging vaccination, provides the following advice to previously recovered patients:²⁸

Yes, you should be vaccinated regardless of whether you already had COVID-19. That's because experts do not yet know how long you are protected from getting sick again after recovering from COVID-19. Even if you have already recovered from COVID-19, it is possible—although rare—that you could be infected with the virus that causes COVID-19 again. Studies have shown that vaccination provides a strong boost in protection in people who have recovered from COVID-19. Learn more about why getting vaccinated is a safer way to build protection than getting infected.

- 28. The text of this advice by the CDC does not address any of the scientific evidence included here about the lack of necessity for recovered COVID patients to be vaccinated. While it is true that I do not know how long natural immunity after recovery lasts, the immunological evidence to date suggests that protection against disease will last for years. ²⁹ Uncertainty over the longevity of immunity after recovery is a specious reason for not exempting COVID-recovered patients from vaccination mandates, since the same can be said about vaccine mediated immunity. I do not know how long it will last either, and there is no reason to believe it provides longer lasting or more complete immunity than recovery from COVID.
- 29. Similarly, just as reinfections are possible though rare after COVID recovery, breakthrough infections are possible after vaccination, as the CDC's team investigating vaccine

²⁸ Centers for Disease Control and Prevention. (2021, September 28). Frequently asked questions about COVID-19 vaccination. Retrieved October 1, 2019 from https://www.cdc.gov/coronavirus/2019-ncov/vaccines/faq.html

²⁹ Patel, N. V. (2021, January 6). *Covid-19 immunity likely lasts for years*. MIT Technology Review. https://www.technologyreview.com/2021/01/06/1015822/covid-19-immunity-likely-lasts-for-years/

breakthrough infections itself recognizes.³⁰ On the same CDC FAQ webpage I cite above,³¹ the CDC writes about vaccine-mediated immunity, "We don't know how long protection lasts for those who are vaccinated."

30. The CDC's main concern in this FAQ seems to be to help people understand that it is safer to attain immunity against SARS-CoV-2 infection via vaccination rather than via infection. This is a point not in dispute. Rather, the question is whether someone who *already* has been infected and recovered will benefit on net from the additional protection provided by vaccination. On this point, the CDC's statement in the FAQ is irrelevant. Here again, the possibility of reinfection does not alter the conclusion that, especially for those who have already recovered from COVID, accommodations can be allowed without threatening public safety.

³⁰ CDC COVID-19 Vaccine Breakthrough Case Investigations Team. (2021). COVID-19 Vaccine Breakthrough Infections Reported to CDC — United States, January 1–April 30, 2021. *Morbidity and Mortality Weekly Report (MMWR)*, 70(21), 792-793. doi: http://dx.doi.org/10.15585/mmwr.mm7021e3

³¹ Centers for Disease Control and Prevention. (2021, September 28). Frequently asked questions about COVID-19 vaccination. Retrieved October 1, 2021 from https://www.cdc.gov/coronavirus/2019-ncov/vaccines/faq.html

III. Conclusion

- 31. Based on the scientific evidence to date, those who have recovered from a SARS-CoV-2 infection possess immunity as robust and durable (or more) as that acquired through vaccination. The existing clinical literature overwhelmingly indicates that the protection afforded to the individual and community from natural immunity is as effective and durable as the efficacy levels of the most effective vaccines to date.
- 32. Based on my analysis of the existing medical and scientific literature, any policy regarding vaccination that does not recognize natural immunity is irrational, arbitrary, and counterproductive to community health.³²
- 33. Indeed, now that every American adult, teenager, and child five and above has free access to the vaccines, the case for a vaccine mandate is weaker than it once was. Since the successful vaccination campaign already protects the vulnerable population, the unvaccinated—especially recovered COVID patients—pose a vanishingly small threat to the vaccinated. They are protected by an effective vaccine that dramatically reduces the likelihood of hospitalization or death after infections to near zero. At the same time, natural immunity provides benefits that are at least as strong and may well be stronger than those from vaccines.
- 34. In conclusion, the emerging evidence from the medical literature finds that COVID-recovered patients have robust and long lasting immunity against SARS-CoV-2 reinfection and that this immunity against infection is better than vaccinated patients who have never had COVID.

³² Bhattacharya, J., Gupta, S. & Kulldorff, M. (2021, June 4). *The beauty of vaccines and natural immunity*. Smerconish Newsletter. https://www.smerconish.com/exclusive-content/the-beauty-of-vaccines-and-natural-immunity

35. I declare under penalty of perjury under the laws of the United States of America that, to the best of my knowledge, the foregoing is true and correct.

Respectfully submitted,

Dr. Jay Bhattacharya, MD, Ph.D.

Professor of Health Policy Stanford University

EXHIBIT

A

Appellate Case: 21-3494 Page: 20 Date Filed: 11/05/2021 Entry ID: 5095038

Address

Department of Health Policy Phone: (650) 736-0404

Stanford University School of Medicine

615 Crothers Way

Stanford, CA 94305-6006

Email: jay@stanford.edu

http://web.stanford.edu/~jay

RESEARCH INTERESTS

Health economics, health policy, and outcomes research

A. ACADEMIC HISTORY:

Stanford University	A.M., A.B.	1990
Stanford University School of Medicine	M.D.	1997
Stanford University Department of Economics	Ph.D.	2000

B. EMPLOYMENT HISTORY:

2001 – present	Professor (Assistant to Full), Stanford University School of Medicine,
	Department of Economics (by courtesy)
2013 – present	Senior Fellow, Stanford Institute for Economic Policy Research
2007 – present	Research Associate, Sphere Institute / Acumen LLC
2002 – present	FRF to Research Associate, National Bureau of Economic Research
2014 – 2021	Senior Fellow Stanford Freeman Spogli Institute
2001 – 2020	Professor (Assistant to Full) Department of Health Research and Policy (by
	courtesy)
2006 – 2008	Research Fellow, Hoover Institution
1998 – 2001	Economist (Associate to Full), RAND Corporation
1998 – 2001	Visiting Assistant Professor, UCLA Department of Economics

C. SCHOLARLY PUBLICATIONS:

PEER-REVIEWED ARTICLES (154 total)

- 1. Yoshikawa A, Vogt W.B., Hahn J., **Bhattacharya J.**, "Toward the Establishment and Promotion of Health Economics Research in Japan," *Japanese Journal of Health Economics and Policy* 1(1):29-45, (1994).
- 2. Vogt WB, **Bhattacharya J**, Kupor S, Yoshikawa A, Nakahara T, "The Role of Diagnostic Technology in Competition among Japanese Hospitals," *International Journal of Technology Management, Series on Management of Technology in Health Care*, 11(1):93-105 (1995).
- 3. **Bhattacharya J**, Vogt WB, Yoshikawa A, Nakahara T, "The Utilization of Outpatient Medical Services in Japan," *Journal of Human Resources*, 31(2): 450-76, (1996).
- 4. Vogt WB, Kupor S, **Bhattacharya J**, Yoshikwawa A, Nakahara T, "Technology and Staffing in Japanese University Hospitals: Government vs. Private," *International Journal of Technology Assessment in Health Care*, 12(1): 93-103, (1996).

Appellate Case: 21-3494 Page: 21 Date Filed: 11/05/2021 Entry ID: 5095038

- 5. Sturm R, Gresenz C, Sherbourne C, **Bhattacharya J**, Farley D, Young AS, Klap R, Minnium K, Burnham MA, and Wells KB. "The Design of Healthcare for Communities: A Study of Health Care Delivery for Alcohol, Drug Abuse, and Mental Health Conditions." *Inquiry* 36(2):221-33 (1999).
- 6. Goldman D, **Bhattacharya J**, Joyce G, D'Amato R, Bozette S, Shapiro M, Liebowitz A. "The Impact of State Policy on the Costs of HIV Infection", *Medical Care Research and Review* 58(1):31-53 (2001). See comments *Medical Care Research and Review* 58(4):497-498 (2001).
- 7. Schoenbaum M, Spranca M, Elliot M, **Bhattacharya J**, Short PF. "Health Plan Choice and Information about Out-of-Pocket Costs: An Experimental Analysis" *Inquiry* 38(1):35-48 (2001).
- 8. Reville R, **Bhattacharya J**, and Sager L. "New Methods and Data Sources for Measuring the Economic Consequences of Workplace Injuries," *American Journal of Industrial Medicine* 40(4):452-63 (2001).
- 9. Goldman D, **Bhattacharya J**, McCaffrey D, Duan N, Leibowitz A, Morton S. "The Effect of Insurance on Mortality in an HIV+ Population in Care," *JASA* 96(455):883-894, (2001). See comments "The Effect of Insurance on Mortality in an HIV+ Population in Care," *JASA* 97(460):1218 (2002).
- 10. Su C, **Bhattacharya J**, and Wang CC, "Role of Neck Surgery in Conjunction with Radiation in Regional Control of Node-Positive Cancer of the Oropharynx" *American Journal of Clinical Oncology* 25(2):109-16. (2002).
- 11. DeLeire T, **Bhattacharya J**, and MaCurdy T. "Comparing Measures of Overtime Across BLS Surveys." *Industrial Relations* 41(2):362-369 (2002).
- 12. Studdert D, **Bhattacharya J**, Warren B, Schoenbaum M, Escarce JJ. "Personal Choices of Health Plans by Managed Care Experts." *Medical Care* 40(5):375-86 (2002).
- 13. **Bhattacharya J**, Schoenbaum M, and Sood N. "Optimal Contributions to Flexible Spending Accounts for Medical Care." *Economics Letters* 76(1):129-135 (2002).
- 14. Reville R, Neuhauser F, **Bhattacharya J**, and Martin C, "Comparing Severity of Impairment for Different Permanent Upper Extremity Musculo-Skeletal Injuries" *Journal of Occupational Rehabilitation* 12(3):205-21 (2002).
- 15. Lakdawalla D., Goldman D, **Bhattacharya J**, Hurd M, Joyce G, and Panis C., "Forecasting the Nursing Home Population", *Medical Care* 41(1):8-20 (2003) See comments "Forecasting the Nursing Home Population," *Medical Care* 41(1):28-31 (2003).
- 16. **Bhattacharya J**, Deleire T, Haider S, Currie J. "Heat or Eat? Cold-Weather Shocks and Nutrition in Poor American Families," *American Journal of Public Health* 93(7):1149-1154 (2003).
- 17. **Bhattacharya J** and Vogt W. "A Simple Model of Pharmaceutical Price Dynamics." *Journal of Law and Economics* 46:599-626 (2003).
- 18. Bhattacharya J, Goldman D, Sood N. "The Link Between Public and Private

Appellate Case: 21-3494 Page: 22 Date Filed: 11/05/2021 Entry ID: 5095038

- Insurance and HIV-Related Mortality," *Journal of Health Economics* 22:1105-1122 (2003).
- 19. Lakdawalla D, **Bhattacharya J**, and Goldman D. "Are the Young Becoming More Disabled?" *Health Affairs* 23(1):168-176 (2004).
- 20. **Bhattacharya J**, Currie J, and Haider S. "Poverty, Food Insecurity, and Nutritional Outcomes in Children and Adults," *Journal of Health Economics* 23(4):839-862 (2004).
- 21. Yoo BK, **Bhattacharya J**, McDonald K and Garber A. "Impacts of Informal Caregiver Availability on Long-term Care Expenditures in OECD Countries," *Health Services Research* 39(6 Pt 2):1971-92 (2004).
- 22. **Bhattacharya J**, Goldman D, and Sood N. "Price Regulation in Secondary Insurance Markets" *Journal of Risk and Insurance* 72(4):61-75 (2005).
- 23. **Bhattacharya J**. "Specialty Selection and Lifetime Returns to Specialization Within Medicine" *Journal of Human Resources* 40(1):115-143 (2005).
- 24. Lakdawalla D, Philipson T, **Bhattacharya J**, "Welfare-Enhancing Technological Change and the Growth of Obesity," *American Economics Review* (Papers and Proceedings) 95(2): 253-257 (2005).
- 25. **Bhattacharya J,** Shang B, Su CK, Goldman D "Technological Advance in Cancer and the Future of Medical Care Expenditures by the Elderly," *Health Affairs*. [Web Exclusive 10.1377/hlthaff.w5.r5-r17] 26 September (2005).
- 26. Goldman DP, Shang B, **Bhattacharya J**, Garber AM, Hurd M, Joyce GF, Lakdawalla D, Panis C, Shekelle P, "Consequences Of Health Trends And Medical Innovation For The Future Elderly," *Health Affairs*. [Web Exclusive 10.1377/hlthaff.w5.r53-r66] 26 September (2005).
- 27. **Bhattacharya J** and Lakdawalla D, "The Labor Market Value of Health Improvements" *The Forum for Health Economics and Health Policy.* Forum: Biomedical Research and the Economy: Article 2 http://www..bepress.fhep/biomedical_research/2 (2005).
- 28. **Bhattacharya J** and Lakdawalla D, "Does Medicare Benefit the Poor?" *Journal of Public Economics* 90(1-2):277-92 (2006).
- 29. **Bhattacharya J**, Goldman D, McCaffrey D, "Estimating Probit Models with Endogenous Covariates," *Statistics in Medicine* 25(3):389-413 (2006).
- 30. **Bhattacharya J**, Currie J, and Haider S, "Breakfast of Champions? The Nutritional Effects of the School Breakfast Program," *Journal of Human Resources* (2006) 41(3):445-466.
- 31. **Bhattacharya J** and Sood N, "Health Insurance and the Obesity Externality" *Advances In Health Economics And Health Services Research* 17:279-318 (2007).
- 32. Shetty K and **Bhattacharya J,** "The Impact of the 2003 ACGME Work Hours Regulations" *Annals of Internal Medicine* 147: 73-80 (2007). See comment "A Response to Dr. Puhan" *Annals of Internal Medicine* 148(6): 482 (2008).
- 33. Bhattacharya J and Shang B, "Model Based Survey Design Using Logits:

Appellate Case: 21-3494 Page: 23 Date Filed: 11/05/2021 Entry ID: 5095038

- Estimating Lost Statistical Power from Random Alternative Sampling" *Survey Research Methods* 1(3):145-154 (2007).ea
- 34. **Bhattacharya J**, Choudhry K, and Lakdawalla D, "Chronic Disease and Trends in Severe Disability in Working Age Populations" *Medical Care* 46(1):92-100 (2008).
- 35. **Bhattacharya J**, Shaikh A, Vytlacil E, "Treatment Effect Bounds under Monotonicity Assumptions: An Application to Swan-Ganz Catheterization" *American Economic Review (Papers and Proceedings)* 98(2): 351–56 (2008).
- 36. Shetty K, Vogt WB, and **Bhattacharya J,** "Hormone Replacement Therapy and Cardiovascular Health in the US." *Medical Care* 47(5):600-606 (2009).
- 37. **Bhattacharya J** and Bundorf K, "The Incidence of the Healthcare Costs of Obesity" *Journal of Health Economics* 28(3):649-658 (2009)
- 38. Bendavid E and **Bhattacharya J,** "PEPFAR in Africa: An Evaluation of Outcomes" *Annals of Internal Medicine* 150(10):688-695 (2009)
- 39. Nukols T, **Bhattacharya J**, Wolman DM, Ulmer C, Escarce JJ, "Cost Implications of Reductions to Resident Physician Work Hours and Workloads for Resident Physicians," *New England Journal of Medicine* 360(21):2202-15 (2009).
- 40. **Bhattacharya J** and Isen A, "On Inferring Demand for Health Care in the Presence of Anchoring and Selection Biases," *Forum for Health Economics & Policy*: 12(2) (Health Economics), Article 6. http://www.bepress.com/fhep/12/2/6 (2009)
- 41. **Bhattacharya J**, Goldman D, and Sood N, "Market Evidence of Misperceived Prices and Mistaken Mortality Risks," *Journal of Economic Behavior and Organization* 72(1):451-462 (2009)
- 42. Seabury S, **Bhattacharya J**, Neuhauser F, Reville R, "Using Empirical Data on Earnings Losses to Improve Permanent Disability Ratings in Workers' Compensation," *Journal of Risk and Insurance* 77(1):231-260 (2010).
- 43. Kautz T, Bendavid E, **Bhattacharya J**, Miller NG, "AIDS and Declining Support for Dependent Elderly People in Africa: Retrospective Analysis Using Demographic and Health Surveys" *British Medical Journal* 340:c2841 doi:10.1136 (2010)
- 44. Patel CJ, **Bhattacharya J**, Butte AJ, "An Environment-Wide Association Study (EWAS) on Type 2 Diabetes Mellitus," *PLoS ONE* 5(5): e10746. doi:10.1371/journal.pone.0010746 (2010)
- 45. Yoo BK, **Bhattacharya J**, Fiscella K, Bennett NM, Szilagyi P, "Effects of Mass Media Coverage on Timing and Annual Receipt of Influenza Vaccination among Medicare Elderly" *Health Services Research* 45(5 Pt 1):1287-309. (2010)
- 46. Bendavid E, Leroux E, **Bhattacharya J**, Smith N, and Miller G, "The Role of Drug Prices and Foreign Assistance in Expanding HIV Treatment in Africa" *British Medical Journal* 341:c6218 (2010)
- 47. Shetty K, Deleire T, White C, and **Bhattacharya J,** "Changes in Hospitalization Rates Following Smoking Bans," *Journal of Policy Analysis and Management* 30(1):6-28 (2011)

Appellate Case: 21-3494 Page: 24 Date Filed: 11/05/2021 Entry ID: 5095038

- 48. **Bhattacharya J** and Sood N, "Who Pays for Obesity?" *Journal of Economic Perspectives* 25(1):139-58 (2011)
- 49. Liu V, Weill D, **Bhattacharya J**, "Racial Differences in Survival Following Lung Transplantation" *Archives of Surgery* 146(3):286-293 (2011)
- 50. Liu V, **Bhattacharya J**, Weill D, Hlatky M, "Persistent Racial Disparities in Survival Following Heart Transplantation" *Circulation* 123:1642-1649 (2011)
- 51. **Bhattacharya J** and Packalen M "Opportunities And Benefits As Determinants Of The Direction Of Scientific Research" *Journal of Health Economics* (2011) 30(4):603-15
- 52. Atella V, **Bhattacharya J**, Carbonari L, "Pharmaceutical Price Controls and Minimum Efficacy Regulation: Evidence from the US and Italy," *Health Services Research* (2012) 47(1 Pt 1):293-308.
- 53. **Bhattacharya J**, Shaikh AM, and Vytlacil E, "Treatment Effect Bounds: An Application to Swan-Ganz Catheterization," *Journal of Econometrics* (2012) 168(2): 223-243.
- 54. **Bhattacharya J** and Packalen M, "The *Other* Ex-Ante Moral Hazard in Health" *Journal of Health Economics* (2012) 31(1):135-46
- 55. Smith-Spangler C, **Bhattacharya J**, and Goldhaber-Fiebert JD, "Diabetes, Its Treatment, and Catastrophic Medical Spending in 35 Developing Countries" *Diabetes Care* (2012) 35(2):319-26
- 56. Arroyo A, Wang E, Saynina O, **Bhattacharya J**, Wise P, "The Association Between Insurance Status and Emergency Department Disposition of Injured California Children" *Academic Emergency Medicine* (2012) 19: 541–551.
- 57. **Bhattacharya J** and Vogt WB, "Do Instrumental Variables Belong in Propensity Scores?" *International Journal of Statistics & Economics* 9(A12) (2012)
- 58. Goldhaber-Fiebert JD, Rubinfeld RE, **Bhattacharya J**, Robinson TN, Wise PH, "The Utility of Childhood and Adolescent Obesity Assessment in Relation to Adult Health" *Medical Decision Making* (2012) 33(2):163-75.
- 59. Bendavid E, Holmes CB, **Bhattacharya J**, Miller G, "HIV Development Assistance and Adult Mortality in Africa" *JAMA* 2012;307(19):2060-2067.
- 60. Perlroth DJ, Bhattacharya J, Goldman DP, Garber AM," An economic analysis of conservative management versus active treatment for men with localized prostate cancer," J Natl Cancer Inst Monogr. 2012(45):250-7.
- 61. **Bhattacharya J**, Gathmann C, Miller NG, "The Gorbachev Anti-Alcohol Campaign and Russia's Mortality Crisis," *American Economic Journals: Applied Economics* (2013) 5(2):232-60.
- 62. Erickson K, Tan K, Winkelmayer W, Chertow G, **Bhattacharya J**, "Variation in Nephrologist Visits to Patients on Hemodialysis across Dialysis Facilities and Geographic Locations." *Clinical Journal of the American Society of Nephrology* (2013): 987-994 doi:10.2215/CJN.10171012
- 63. Bundorf K, Mata R, Schoenbaum M, **Bhattacharya J**, "Are Prescription Drug Insurance Choices Consistent with Expected Utility Theory?" *Health Psychology* (2013) *32*(9), 986.

Appellate Case: 21-3494 Page: 25 Date Filed: 11/05/2021 Entry ID: 5095038

- 64. Basu S, Seligman H, **Bhattacharya J**, "Nutritional policy changes in the Supplemental Nutrition Assistance Program: A microsimulation and costeffectiveness analysis" *Medical Decision Making* (2013) *33*(7), 937-948.
- 65. Wang NE, Saynina O, Vogel LD, Newgard CD, **Bhattacharya J**, Phibbs CS. The effect of trauma center care on pediatric injury mortality in California, 1999 to 2011. *J Trauma Acute Care Surg*. 2013 Oct;75(4):704-16. doi: 10.1097/TA.0b013e31829a0a65. PMID: 24064887; PMCID: PMC4306425.
- 66. Nguyen C, Hernandez-Boussard T., Davies SM, **Bhattacharya J**, Khosla RM, Curtin CM, "Cleft Palate Surgery: An Evaluation of Length of Stay, Complications, and Costs by Hospital Type," *The Cleft Palate-Craniofacial Journal*. (2013)
- 67. Austin D, Luan A, Wang L, **Bhattacharya J,** "Small Increases to Employer Premiums Could Shift Millions of People to the Exchanges and Add Billions of Dollars to Federal Outlays" *Health Affairs* 32.9 (2013): 1531-1537.
- 68. Bendavid E and **Bhattacharya J**, "The Relationship of Health Aid to Population Health Improvements" *JAMA Internal Medicine* Jun;174(6):881-7. doi: 10.1001/jamainternmed.2014.292. (2014) PMID: 24756557
- 69. Erickson K, Winkelmayer W, Chertow G, **Bhattacharya J** "Physician Visits and 30-day Hospital Readmissions in Patients Receiving Hemodialysis." *Journal of the American Society of Nephrology* Sep;25(9):2079-87. doi: 10.1681/ASN.2013080879 (2014) PMID: 2481216.
- 70. Patel RB, Mathur MB, Gould M, Uyeki TM, **Bhattacharya J**, Xiao Y, Khazeni N "Demographic and Clinical Predictors of Mortality from Highly Pathogenic Avian Influenza A (H5N1) Virus Infection: CART Analysis of International Cases." PLoS One Mar 25;9(3):e91630. doi: 10.1371/journal.pone.0091630. eCollection 2014. PMID: 24667532 (2014).
- 71. Basu S, Seligman H, Gardner C, and **Bhattacharya J**, "Ending SNAP subsidies for sugar-sweetened beverages could reduce obesity and type 2 diabetes" *Health Affairs* Jun;33(6):1032-9. doi: 10.1377/hlthaff.2013.1246 (2014) PMID: 24889953
- 72. Jena AB, Schoemaker L, and **Bhattacharya J**, "Exposing Physicians to Reduced Residency Work Hours Did Not Adversely Affect Patient Outcomes After Residency" *Health Affairs* 33:1832-1840 (2014)
- 73. Mathur MB, Patel RB, Gould M, Uyeki TM, **Bhattacharya J**, Xiao Y, Gillaspie Y, Khazeni N, "Global Seasonal Patterns in Human HPAI H5N1 Infection: Analysis of International Cases" *PLoS ONE* Sep 12;9(9):e106171. doi: 10.1371/journal.pone.0106171. eCollection 2014. PMID: 25215608 (2014)
- 74. **Bhattacharya J**, Vogt WB. "Employment and Adverse Selection in Health Insurance." *Forum for Health Economics and Policy* 17(1):79-104. DOI: 10.1515/fhep-2013-0017 (2014)
- 75. Erickson KF, Winkelmayer WC, Chertow GM, and **Bhattacharya J**. "Medicare Reimbursement Reform for Provider Visits and Health Outcomes in Patients on Hemodialysis." Forum for Health Economics and Policy 17(1):53-77 (2014)
- 76. Park MD, **Bhattacharya J**, Park KT. "Differences in healthcare expenditures for inflammatory bowel disease by insurance status, income, and clinical care setting." PeerJ. Sep 23;2:e587. doi: 10.7717/peerj.587 PMID: 25279267 (2014)

Appellate Case: 21-3494 Page: 26 Date Filed: 11/05/2021 Entry ID: 5095038

- 77. Erickson KF, Mell MW, Winkelmayer WC, Chertow GM, and **Bhattacharya J** "Provider Visit Frequency and Vascular Access Interventions in Hemodialysis" *Clinical Journal of the American Society of Nephrology* (2015) 10(2):269-77. doi: 10.2215/CJN.05540614. PMID: 25587105
- 78. Chicklis C, MaCurdy T, **Bhattacharya J**, Shafrin J, Zaidi S, and Rogers D "Regional Growth in Medicare Spending, 1992-2010." *Health Services Research* (2015) 50(5):1574-88. doi: 10.1111/1475-6773.12287 PMID: 25676603
- 79. Romley JA, Axeen S, Lakdawalla DN, Chernew ME, **Bhattacharya J**, and Goldman DP. "The Relationship between Commercial Health Care Prices and Medicare Spending and Utilization." Health Services Research (2015) 50(3):883-96. doi: 10.1111/1475-6773.12262. PMID: 25429755
- 80. Gidwani R and **Bhattacharya J** "CMS Reimbursement Reform and the Incidence of Hospital-Acquired Pulmonary Embolism or Deep Vein Thrombosis." *Journal of General Internal Medicine* 30(5):588-596 (2015)
- 81. Erickson KF, Mell MW, Winkelmayer WC, Chertow GM, and **Bhattacharya J** "Provider Visits and Early Vascular Access Placement in Maintenance Hemodialysis." *Journal of the American Society of Nephrology* 26(8):1990-7 doi:10.1681/ASN.2014050464 (2015) PMID: 25452668
- 82. Goldhaber-Fiebert JD, Studdert DM, Farid MS, **Bhattacharya J** "Will Divestment from Employment-Based Health Insurance Save Employers Money? The Case of State and Local Governments." *Journal of Empirical Legal Studies* 12(3): 343-394 (2015) DOI: 10.1111/jels.12076
- 83. Alsan M, Schoemaker L, Eggleston K, Kammili N, Kolli P, **Bhattacharya J**. "Out-of-pocket health expenditures and antimicrobial resistance in low- and middle-income countries" *Lancet Infectious Disease* (2015) 15(10):1203-1210
- 84. Wang L, Haberland C, Thurm C, **Bhattacharya J**, Park KT. "Health Outcomes in US Children with Abdominal Pain at Major Emergency Departments Associated with Race and Socioeconomic Status" *PLoS One* 10(8): e0132758 DOI: 10.1371/journal.pone.0132758 (2015)
- 85. Patel MI, **Bhattacharya J**, Asch SM, Kahn J "Acceptance of Advance Directives and Palliative Care Referral for Veterans with Advanced Cancer: A Retrospective Analysis." *The American Journal of Hospice & Palliative Care* DOI:10.1177/1049909115595216 (2015).
- 86. Jena AB, Schoemaker L, **Bhattacharya J**, Seabury SA (2015) Physician spending and subsequent risk of malpractice claims: observational study. *BMJ* 2015;351:h5516 doi: 10.1136/bmj.h5516. PMID: 26538498 See also: Jena AB, Schoemaker L, Bhattacharya J, Seabury SA. "Authors' reply to Barbieri and Kovarik, Mariani, and Waxman and Kanzaria." *BMJ*. 2015 351:h6774. doi: 10.1136/bmj.h6774 (2015). PMID: 26668033
- 87. Richman I, Asch SM, **Bhattacharya J**, Owens DK. "Colorectal Cancer Screening in the Era of the Affordable Care Act" *Journal of General Internal Medicine* (2016) 31(3):315-20. doi: 10.1007/s11606-015-3504-2. PMID: 26349953
- 88. Mooney JJ, **Bhattacharya J**, and Dhillon GS Effect of Transplant Center Volume on Cost and Readmissions in Medicare Lung Transplant Recipients, *Annals of the*

Appellate Case: 21-3494 Page: 27 Date Filed: 11/05/2021 Entry ID: 5095038

- American Thoracic Society 13(7):1034-41. doi: 10.1513/AnnalsATS.201601-017OC (2016). PMID: 27064753
- 89. Hurley MP, Schoemaker L, Morton JM, Wren SM, Vogt WB, Watanabe S, Yoshikawa A, **Bhattacharya J**. "Geographic variation in surgical outcomes and cost between the United States and Japan." *Am J Manag Care*. 22(9):600-7 (2016) PMID: 27662222
- 90. Erickson KF, Winkelmayer WC, Chertow GM, **Bhattacharya J**. "Hemodialysis Hospitalizations and Readmissions: The Effects of Payment Reform." *Am J Kidney Dis.* 2016 Nov 14. pii: S0272-6386(16)30524-8. doi: 10.1053/j.ajkd.2016.08.033. (2016) PMID: 27856087
- 91. Richman I, Asch SM, Bendavid E, **Bhattacharya J**, Owens DK. "Breast Density Notification Legislation and Breast Cancer Stage at Diagnosis: Early Evidence from the SEER Registry." *J Gen Intern Med.* 32(6):603-609 (2017) doi: 10.1007/s11606-016-3904-y. PMID: 27844260
- 92. Erickson KF, Zheng Y, Winkelmayer WC, Ho V, **Bhattacharya J**, Chertow GM. "Consolidation in the Dialysis Industry, Patient Choice, and Local Market Competition." *Clin J Am Soc Nephrol.* 12(3):536-545 (2017) doi: 10.2215/CJN.06340616 PMID: 27831510
- 93. Erickson KF, Winkelmayer WC, Chertow GM, **Bhattacharya J**. "Effects of physician payment reform on provision of home dialysis." *Am J Manag Care* 22(6):e215-23. (2016) PMID: 27355909
- 94. Eneriz-Wiemer M, Saynina O, Sundaram V, Lee HC, **Bhattacharya J**, Sanders LM. "Parent Language: A Predictor for Neurodevelopmental Follow-up Care Among Infants With Very Low Birth Weight." *Acad Pediatr*. 16(7):645-52. doi: 10.1016/j.acap.2016.04.004. (2016) PMID: 27130810
- 95. Chen B, Jalal H, Hashimoto H, Suen SC, Eggleston K, Hurley M, Schoemaker L, and **Bhattacharya J**. "Forecasting Trends in Disability in a Super-Aging Society: Adapting the Future Elderly Model to Japan," *Journal of the Economics of Ageing* 8 (2016): 42-51.
- 96. Liu VX, Fielding-Singh V, Greene JD, Baker JM, Iwashyna TJ, **Bhattacharya J**, Escobar GJ. "The Timing of Early Antibiotics and Hospital Mortality in Sepsis" *Am J Respir Crit Care Med*. (2017) 196(7):856-863. doi: 10.1164/rccm.201609-1848OC PMID: 28345952
- 97. Shaw JG, Farid M, Noel-Miller C, Joseph N, Houser A, Asch SA, **Bhattacharya J**, Flowers L. "Social Isolation and Medicare Spending: Among Older Adults, Objective Social Isolation Increases Expenditures while Loneliness Does Not" *J of Aging and Health* 29(7):1119-1143 (2017)
- 98. Tran EMT, **Bhattacharya J**, Pershing S. "Self-Reported Receipt of Dilated Fundus Examinations Among Patients with Diabetes: Medical Expenditure Panel Survey, 2002-2013" *American Journal of Ophthalmology* 179:18-24 (2017) doi: 10.1016/j.ajo.2017.04.009 PMID: 28455116
- 99. Lin E, Cheng XS, Chin KK, Zubair T, Chertow GM, Bendavid E, Bhattacharya J. "Home Dialysis in the Prospective Payment System Era" J Am Soc Nephrol 28(10):2993-3004. doi: 10.1681/ASN.2017010041. Epub 2017 May 10. (2017) PMID: 28490435

Appellate Case: 21-3494 Page: 28 Date Filed: 11/05/2021 Entry ID: 5095038

- 100. Hakim I, Hathi S, Nair A, Narula T, **Bhattacharya J**. "Electronic health records and the frequency of diagnostic test orders" *Am J Manag Care*. 23(1):e16-e23. (2017) PMID: 28141935
- 101. Pollom EL, Wang G, Harris JP, Koong AC, Bendavid E, **Bhattacharya J**, Chang DT. "The Impact of Intensity Modulated Radiation Therapy on Hospitalization Outcomes in the SEER-Medicare Population With Anal Squamous Cell Carcinoma" *Int J Radiat Oncol Biol Phys.* 98(1):177-185. doi: 10.1016/j.ijrobp.2017.01.006. PMID: 28258896 (2017)
- 102. Kwong JZ, Weng Y, Finnegan M, Schaffer R, Remington A, Curtin C, McDonald KM, Bhattacharya J, Hernandez-Boussard T. "Effect of Medicare's Nonpayment Policy on Surgical Site Infections Following Orthopedic Procedures" Infect Control Hosp Epidemiol. 38(7):817-822 doi: 10.1017/ice.2017.86. (2017) PMID: 28487001
- 103. Chen SP, **Bhattacharya J**, Pershing S. "Vision Loss and Cognition in the US Population of Older Adults, *JAMA Ophthalmology* 135(9):963-970 (2017) DOI: 10.1001/jamaophthalmol.2017.2838 PMID: 28817745 PMCID: PMC5710542
- 104. Lin E, MaCurdy M, Bhattacharya J "MACRA and its Implications for Nephrology" Journal of American Society of Nephrology (2017) 28(9):2590-2596. doi: 10.1681/ASN.2017040407
- 105. Sandhu AT, Heidenreich PA, Bhattacharya J, and Bundorf MK "Cardiovascular Testing and Clinical Outcomes in Emergency Department Patients with Chest Pain" JAMA Internal Medicine (2017) 177(8):1175-1182 PMID: 28654959 PMCID: PMC5710427 doi:10.1001/jamainternmed.2017.2432
- 106. Mooney JJ, Hedlin H, Mohabir P, **Bhattacharya J**, & Dhillon GS. "Racial and ethnic disparities in lung transplant listing and waitlist outcomes." *The Journal of Heart and Lung Transplantation*, *37*(3), 394–400. doi:10.1016/j.healun.2017.09.017 (2017)
- 107. Packalen M and **Bhattacharya J** (2017) "Neophilia Ranking of Scientific Journals" *Scientometrics* 110(1):43-64 PMID: 28713181 PMCID: PMC5506293 doi: 10.1007/s11192-016-2157-1
- 108. Garber AM, Azad TD, Dixit A, Farid M, Sung E, Vail D, Bhattacharya J "Medicare savings from conservative management of low back pain" American Journal of Managed Care 24(10):e332-e337. (2018)
- 109. Patel MI, Sundaram V, Desai M, Periyakoil VS, Kahn JS, **Bhattacharya J**, Asch SM, Milstein A, and Bundorf MK. "Effect of a Lay Health Worker Intervention on Goals-of-Care Documentation and on Health Care Use, Costs, and Satisfaction Among Patients with Cancer: A Randomized Clinical Trial." *JAMA Oncol.* 4(10):1359-1366. doi: 10.1001/jamaoncol.2018.2446. (2018)
- 110. Erickson KF, Winkelmayer WC, Ho V, **Bhattacharya J**, Chertow GM "Market Competition and Health Outcomes in Hemodialysis" *Health Services Research* 53(5):3680-3703. doi: 10.1111/1475-6773.12835. Epub 2018 Feb 22. (2018)
- 111. Yu JX, Oliver M, Lin J, Chang M, Limketkai BN, Soetikno R, **Bhattacharya J**,
 Kaltenbach T. Patients Prescribed Direct-Acting Oral Anticoagulants Have Low
 Risk of Postpolypectomy Complications. *Clinical Gastroenterology and*

Appellate Case: 21-3494 Page: 29 Date Filed: 11/05/2021 Entry ID: 5095038

- Hepatology. https://doi.org/10.1016/J.CGH.2018.11.051 17(10 2000-2007.e3 (2018) PMID: 30503964. PMCID: PMC6541555
- 112. Patel CJ, **Bhattacharya J**, Ioannidis J, & Bendavid E. "Systematic identification of correlates of HIV infection." *AIDS*, *32*(7):933-943. (2018)
- 113. McKenzie RB, Sanders L, Bhattacharya J, Bundorf MK "Health Care System Factors Associated with Transition Preparation in Youth with Special Health Care Needs" Population Health Management 22(1):63-73. doi: 10.1089/pop.2018.0027. Epub 2018 Jun 29 (2019)
- 114. Erickson KF, Winkelmayer WC, Ho V, Bhattacharya J, Chertow GM "Market Consolidation and Mortality in Patients Initiating Hemodialysis" *Value in Health*. 22(1):69-76. doi: 10.1016/j.jval.2018.06.008. Epub 2018 Jul 27. (2019)
- 115. Curto V, Einav L, Finkelstein A, Levin J, & **Bhattacharya J**. "Health Care Spending and Utilization in Public and Private Medicare." *American Economic Journal: Applied Economics*, 11(2), 302–332. https://doi.org/10.1257/app.20170295 (2019)
- 116. Mooney JJ, **Bhattacharya J**, and Dhillon GS "Effect of Broader Geographic Sharing of Donor Lungs on Lung Transplant Waitlist Outcomes" *Journal of Heart and Lung Transplantation* 38(2):136-144. doi: 10.1016/j.healun.2018.09.007. Epub 2018 Sep 14. (2019)
- 117. Azad, T., Vail, D., Bentley, J., Han, S., Suarez, P., Varshneya, K., Mittal V, Desai M, **Bhattacharya J**, and Ratliff, J. "Initial Provider Specialty is Associated with Long-term Opiate Use in Patients with Newly Diagnosed Low Back and Lower Extremity Pain." Spine 44(3):211-218. doi: 10.1097/BRS.0000000000002840. (2019)
- 118. Patel MI, Moore D, **Bhattacharya J**, Milstein A, & Coker TR "Perspectives of Health Care Payer Organizations on Cancer Care Delivery Redesign: A National Study" *Journal of Oncology Practice* 15:1, e46-e55 (2019)
- 119. Lin E, **Bhattacharya J**, & Chertow GM "Prior Hospitalization Burden and the Relatedness of 30-Day Readmissions in Patients Receiving Hemodialysis." *Journal of the American Society of Nephrology*, 30(2), 323–335. https://doi.org/10.1681/asn.2018080858 (2019)
- 120. Packalen M, & **Bhattacharya J**. "Age and the Trying Out of New Ideas." *Journal of Human Capital*, 13(2), 341–373. https://doi.org/10.1086/703160 (2019)
- 121. Patel MI, Ramirez D, Agajanian R, Agajanian H, **Bhattacharya J**, & Bundorf KM "Lay Health Worker-Led Cancer Symptom Screening Intervention and the Effect on Patient-Reported Satisfaction, Health Status, Health Care Use, and Total Costs: Results From a Tri-Part Collaboration." *Journal of Oncology Practice*, https://doi.org/10.1200/JOP.19.00152 (2019)
- 122. Sandhu AT, Kohsaka S, **Bhattacharya J**, Fearon WF, Harrington RA, & Heidenreich PA. "Association Between Current and Future Annual Hospital Percutaneous Coronary Intervention Mortality Rates." *JAMA Cardiology*, 1–8. https://doi.org/10.1001/jamacardio.2019.3221 (2019)
- 123. Patel M, Andrea N, **Bhattacharya J**, & Coker TR. "A Community-Partnered, Evidence-Based Approach to Improving Cancer Care Delivery for Low-Income

Appellate Case: 21-3494 Page: 30 Date Filed: 11/05/2021 Entry ID: 5095038

- and Minority Patients with Cancer." *Journal of Community Health*, 44(5), 912–920. https://doi.org/10.1007/s10900-019-00632-x (2019)
- 124. Hamad R, Templeton ZS, Schoemaker L, Zhao M, & Bhattacharya J. "Comparing Demographic and Health Characteristics of New and Existing SNAP Recipients: Application of A Machine Learning Algorithm." The American Journal of Clinical Nutrition, 109(4), 1164–1172. https://doi.org/10.1093/ajcn/nqy355 (2019)
- 125. Erickson KF, Zhao B, Niu J, Winkelmayer WC, **Bhattacharya J**, Chertow GM, & Ho V. "Association of Hospitalization and Mortality Among Patients Initiating Dialysis with Hemodialysis Facility Ownership and Acquisitions." *JAMA Network Open*, 2(5), e193987. https://doi.org/10.1001/jamanetworkopen.2019.3987 (2019)
- 126. Jena AB, Farid M, Blumenthal D, & **Bhattacharya J**. "Association of Residency Work Hour Reform with Long Term Quality and Costs of Care of US Physicians: Observational Study." *BMJ*, 366, l4134. https://doi.org/10.1136/bmj.l4134 (2019).
- 127. Hamad R, Nguyen TT, **Bhattacharya J**, Glymour MM, & Rehkopf DH. "Educational Attainment and Cardiovascular Disease in The United States: A Quasi-Experimental Instrumental Variables Analysis." *PLoS Medicine*, 16(6), e1002834. https://doi.org/10.1371/journal.pmed.1002834 (2019)
- 128. Yu JX, Lin JL, Oliver M, Soetikno R, Chang MS, Kwong AJ, Limketkai BN, **Bhattacharya J**, Kaltenbach T. Trends in EMR for Nonmalignant Colorectal Polyps in The United States. *Gastrointestinal Endoscopy*. https://doi.org/10.1016/j.gie.2019.08.004 (2019)
- 129. Kim D, Chen C, Tysinger B, Park S, Chong MZ, Wang L, Zhao M, Yean JM, Koh WP, Yoong J, **Bhattacharya J**, & Eggleston K. Smoking, life expectancy, and chronic disease in South Korea, Singapore, and the United States: A microsimulation model [published online ahead of print, 2019 Dec 4]. Health Econ. 2019;10.1002/hec.3978. doi:10.1002/hec.3978
- 130. Ryckman T, Robinson M, Pedersen C, **Bhattacharya J**, Bendavid E. Impact of Feed the Future initiative on nutrition in children aged less than 5 years in sub-Saharan Africa: difference-in-differences analysis. *BMJ*.;367:l6540. Published 2019 Dec 11. doi:10.1136/bmj.l6540 (2019) PMID: 31802569 PMCID: PMC7269831
- 131. Pan CK, Vail D, **Bhattacharya J**, Cao M, Mruthyunjaya P. (2020) The Effect of Obstructive Sleep Apnea on Absolute Risk of Central Serous Chorioretinopathy. Am J Ophthalmol. 2020 Oct;218:148-155 PMID 32574769
- 132. Erickson KF, Shen JI, Zhao B, Winkelmayer WC, Chertow GM, Ho V, & **Bhattacharya J**. Safety-Net Care for Maintenance Dialysis in the United States. *J Am Soc Nephrol*. 31(2):424-433. doi:10.1681/ASN.2019040417 (2020) PMID: 31857351 PMCID: PMC7003304
- 133. Bonde AN, Martinussen T, Lee CJ, Lip GYH, Staerk L, Bang CN, **Bhattacharya J**, Gislason G, Torp-Pedersen C, Olesen JB, Hlatky MA. Rivaroxaban Versus Apixaban for Stroke Prevention in Atrial Fibrillation: An Instrumental Variable Analysis of a Nationwide Cohort. Circ Cardiovasc Qual

Appellate Case: 21-3494 Page: 31 Date Filed: 11/05/2021 Entry ID: 5095038

- Outcomes.13(4):e006058. doi:10.1161/CIRCOUTCOMES.119.006058 (2020) PMID: 32283966
- 134. Sood N, Simon P, Ebner P, Eichner D, Reynolds J, Bendavid E, & Bhattacharya J Seroprevalence of SARS-CoV-2-Specific Antibodies Among Adults in Los Angeles County, California, on April 10-11, 2020 [published online ahead of print, 2020 May 18]. JAMA.;e208279. doi:10.1001/jama.2020.8279 (2020) PMID: 32421144 PMCID: PMC7235907
- 135. Packalen M, **Bhattacharya J**. NIH funding and the pursuit of edge science. Proc Natl Acad Sci U S A. 117(22):12011-12016. doi:10.1073/pnas.1910160117 (2020)
- 136. Alobuia WM, Dalva-Baird NP, Forrester JD, Bendavid E, **Bhattacharya J**, Kebebew E. Racial disparities in knowledge, attitudes and practices related to COVID-19 in the USA [published online ahead of print, 2020 Jun 3]. J Public Health (Oxf). 2020;fdaa069. doi:10.1093/pubmed/fdaa069
- 137. Shin SH, Lillard DR, **Bhattacharya J**. Understanding the correlation between Alzheimer's Disease polygenic risk, wealth, and the composition of wealth holdings. *Biodemography and Social Biology* (2020) Oct 28;268:113473. doi: 10.1016/j.socscimed.2020.113473
- 138. Curto V, Einav L, Levin J, and **Bhattacharya J**. Can Health Insurance Competition Work? Evidence from Medicare Advantage. *Journal of Political Economy* (2021) 129(2): 570-606.
- 139. Sandhu AT, **Bhattacharya J**, Lam J, Bounds S, Luo B, Moran D, Uwilingiyimana AS, Fenson D, Choradia N, Do R, Feinberg L, MaCurdy T, Nagavarapu S. Adjustment for Social Risk Factors Does Not Meaningfully Affect Performance On Medicare's MIPS Clinician Cost Measures. *Health Aff* (Millwood). 2020 Sep;39(9):1495-1503. doi: 10.1377/hlthaff.2020.00440. PMID: 32897780.
- 140. Kasajima M, Hashimoto H, Suen SC, Chen B, Jalal H, Eggleston K, **Bhattacharya**J. Future projection of the health and functional status of older people in
 Japan: A multistate transition microsimulation model with repeated crosssectional data. *Health Econ*. 2020 Jul 14. doi: 10.1002/hec.3986. Epub ahead of
 print. PMID: 32662080.
- 141. Lin E, Chertow GM, **Bhattacharya J**, Lakdawalla D. Early Delays in Insurance Coverage and Long-term Use of Home-based Peritoneal Dialysis. Med Care. 2020 Jul;58(7):632-642. doi: 10.1097/MLR.000000000001350. PMID: 32520837; PMCID: PMC7295012.
- 142. Peirlinck M, Linka K, Costabal FS, **Bhattacharya J**, Bendavid E, Ioannidis J, Kuhl E (2020), "Visualizing the Invisible: The Effect of Asymptotic Transmission on the Outbreak Dynamics of COVID-19" *Computer Methods in Applied Mechanics and Engineering*. 372: 1 Dec. 2020, 113410. https://doi.org/10.1016/j.cma.2020.113410.
- 143. Azad, T. D., Zhang, Y., Stienen, M. N., Vail, D., Bentley, J. P., Ho, A. L., Fatemi, P., Herrick, D., Kim, L. H., Feng, A., Varshneya, K., Jin, M., Veeravagu, A., **Bhattacharya, J.,** Desai, M., Lembke, A., & Ratliff, J. K. (2020). Patterns of Opioid and Benzodiazepine Use in Opioid-Naïve Patients with Newly

Appellate Case: 21-3494 Page: 32 Date Filed: 11/05/2021 Entry ID: 5095038

- Diagnosed Low Back and Lower Extremity Pain. *Journal of General Internal Medicine*, 35(1), 291–297. https://doi.org/10.1007/s11606-019-05549-8
- 144. Bendavid E, Oh C, **Bhattacharya J**, Ioannidis J (2020) "Assessing Mandatory Stay-at-Home and Business Closure Effects on the Spread of COVID-19" *European Journal of Clinical Investigation*. 5 January 2021. doi:10.1111/eci.13484
- 145. Zhang J, Chen Y, Einav L, Levin J, **Bhattacharya J.** Consolidation of primary care physicians and its impact on healthcare utilization. *Health Econ*. 2021 Mar 25. doi: 10.1002/hec.4257. Epub ahead of print. PMID: 33764640.
- 146. Lin JL, Rigdon J, Van Haren K, Buu M, Saynina O, Bhattacharya J, Owens DK, Sanders LM. Gastrostomy Tubes Placed in Children With Neurologic Impairment: Associated Morbidity and Mortality. J Child Neurol. 2021 Mar 22:8830738211000179. doi: 10.1177/08830738211000179. Epub ahead of print. PMID: 33750232.
- 147. Lin E, Chertow GM, **Bhattacharya J**, Lakdawalla D. Early Delays in Insurance Coverage and Long-term Use of Home-based Peritoneal Dialysis. *Med Care*. 2020 Jul;58(7):632-642. doi: 10.1097/MLR.000000000001350. PMID: 32520837; PMCID: PMC7295012.
- 148. Alsan M, Atella V, **Bhattacharya J**, Conti V, Mejia I, Miller G. (2021)
 Technological Progress and Health Convergence: The Case of Penicillin in Postwar Italy. *Demography* 58 (4): 1473–1498. https://doi.org/10.1215/00703370-9368970
- 149. Bendavid E, Mulaney B, Sood N, Shah S, Bromley-Dulfano R, Lai C, Weissberg Z, Saavedra-Walker R, Tedrow J, Bogan A, Kupiec T, Eichner D, Gupta R, Ioannidis JPA, **Bhattacharya J.** COVID-19 antibody seroprevalence in Santa Clara County, California. *Int J Epidemiol.* 2021 Feb 22:dyab010. doi: 10.1093/ije/dyab010. Epub ahead of print. PMID: 33615345; PMCID: PMC7928865.
- 150. Park, W. G., Sandhu, A., MaCurdy, T., Choradia, N., Schmitt, C., Koscheski, C., Lam, J., Bounds, S., Do, R., Feinberg, L., Vail, D., Nagavarapu, S., & Bhattacharya, J. (2021). Development of a Cost Measure for Screening/Surveillance Colonoscopy for the Merit-Based Incentive Payment System. Gastroenterology. https://doi.org/10.1053/j.gastro.2021.03.040
- 151. Sandhu, A. T., Do, R., Lam, J., Blankenship, J., Van Decker, W., Rich, J., Gonzalez, O., Wu, X., Pershing, S., Lin, E., MaCurdy, T. E., Bhattacharya, J., & Nagavarapu, S. (2021). Development of the Elective Outpatient Percutaneous Coronary Intervention Episode—Based Cost Measure. Circulation: Cardiovascular Quality and Outcomes, 14(3), 6461. https://doi.org/10.1161/circoutcomes.119.006461
- 152. Duseja R, Andress J, Sandhu AT, **Bhattacharya J**, Lam J, Nagavarapu S, Nilasena D, Choradia N, Do R, Feinberg L, Bounds S, Leoung J, Luo B, Swygard A, Uwilingiyimana A, MaCurdy T. (2021) Development of Episode-Based Cost Measures for the US Medicare Merit-based Incentive Payment System. *JAMA Health Forum.* 2021;2(5):e210451. doi:10.1001/jamahealthforum.2021.0451
- 153. Tisdale RL, Ma I, Vail D, **Bhattacharya J**, Goldhaber-Fiebert J, Heidenreich PA, Sandhu A. (2021) Availability of Cost-effectiveness Studies for Drugs With High

Appellate Case: 21-3494 Page: 33 Date Filed: 11/05/2021 Entry ID: 5095038

- Medicare Part D Expenditures. *JAMA Netw Open*. 2021;4(6):e2113969. doi:10.1001/jamanetworkopen.2021.13969
- 154. Dalva-Baird NP, Alobuia WM, Bendavid E, **Bhattacharya J**. Racial and ethnic inequities in the early distribution of U.S. COVID-19 testing sites and mortality. *Eur J Clin Invest*. 2021 Aug 14:e13669. doi: 10.1111/eci.13669. Epub ahead of print. PMID: 34390487.

NON-PEER-REVIEWED WORK (63 total)

- 1. **Bhattacharya J**, Garber AM, MaCurdy T. Cause-Specific Mortality among Medicare Enrollees. *National Bureau of Economic Research Working Paper Series*. 1996;No. 5409.
- 2. **Bhattacharya J,** Currie J. "Youths at Nutritional Risk: Malnourished or Misnourished?" *National Bureau of Economic Research Working Paper Series*. 2000;No. 7686(7686):483–522.
- 3. **Bhattacharya J,** Lakdawalla D. Does Medicare Benefit the Poor? New Answers to an Old Question. *National Bureau of Economic Research Working Paper Series*. 2002;No. 9280.
- 4. **Bhattacharya J.** "Coinsurance, Cost Sharing, and the Demand Managed Behavioral Health Services" *Frontlines: Linking Alcohol Services Research & Practice*, June (2003).
- 5. **Bhattacharya J**, Lakdawalla D. Time-Inconsistency and Welfare. *National Bureau of Economic Research Working Paper Series*. 2004;No. 10345.
- 6. Sood N, Alpert A, **Bhattacharya J**. Technology, Monopoly and the Decline of the Viatical Settlements Industry. *National Bureau of Economic Research Working Paper Series*. 2005;No. 11164(March).
- 7. **Bhattacharya J**, Vogt WB. Employment and Adverse Selection in Health Insurance. *National Bureau of Economic Research Working Paper Series*. 2006;No. 12430(August).
- 8. Bhattacharya J. "Dollars to Doughnuts" Hoover Digest 3 (2007).
- 9. **Bhattacharya J**, Vogt WB. Do Instrumental Variables Belong in Propensity Scores? National Bureau of Economic Research, Inc, NBER Technical Working Papers: 0343; 2007;No. 343.
- 10. **Bhattacharya J**, Packalen M. Is Medicine an Ivory Tower? Induced Innovation, Technological Opportunity, and For-Profit vs. Non-Profit Innovation. *National Bureau of Economic Research Working Paper Series*. 2008;No. 13862.
- 11. Atella V, **Bhattacharya J**, Carbonari L. Pharmaceutical Industry, Drug Quality and Regulation: Evidence from US and Italy. *National Bureau of Economic Research Working Paper Series*. 2008.
- 12. **Bhattacharya J**. Insuring the near-elderly: how much would Medicare save? *Ann Intern Med*. 2009 Dec 1;151(11):816-7. doi: 10.7326/0003-4819-151-11-200912010-00158. PMID: 19949148.

Appellate Case: 21-3494 Page: 34 Date Filed: 11/05/2021 Entry ID: 5095038

- 13. Yoo B-K, Kasajima M, **Bhattacharya J**. Public Avoidance and the Epidemiology of novel H1N1 Influenza A. *National Bureau of Economic Research Working Paper Series*. 2010;15752:1–39.
- 14. Aranovich G, **Bhattacharya J**, Garber A, MaCurdy T, "Coping with Chronic Disease? Chronic Disease and Disability in Elderly American Population 1982-1999," NBER Working Paper #14811 (2009)
- 15. Jena AB, Schoemaker L, **Bhattacharya J**, Seabury SA. "Authors' reply to Barbieri and Kovarik, Mariani, and Waxman and Kanzaria." BMJ. 351:h6774. doi: 10.1136/bmj.h6774. (2015) PMID: 26668033
- 16. Gidwani R, **Bhattacharya J**. "CMS Reimbursement Reform: Authors' Reply." *J Gen Intern Med.* 2015 30(11):1588. doi: 10.1007/s11606-015-3465-5. PMID: 26179821
- 17. **Bhattacharya J**. "A way out of the dismal arithmetic of hepatitis C treatment." *Am J Manag Care*. (6 Spec No.):SP183-4. (2016) PMID: 27266945
- 18. Liu V, Fielding-Singh V, Iwashyna TJ, **Bhattacharya J**, Escobar G. "Reply to the Timing of Early Antibiotics and Hospital Mortality in Sepsis Playing Devil's Advocate. *Am J Respir Crit Care Med*. doi: 10.1164/rccm.201704-0774LE. (2017) PMID: 28485627
- 19. L Flowers, A Houser, C Noel-Miller, J Shaw, **J Bhattacharya** (2017) "Medicare spends more on socially isolated older adults." *AARP Insight on the Issues* 125, 1119-1143.
- 20. **Bhattacharya J** and Packalen M (2020) Stagnation and Scientific Incentives. *National Bureau of Economic Research Working Paper* #26752. https://www.nber.org/papers/w26752
- 21. Bendavid E and **Bhattacharya J** "Is the Coronavirus as Deadly as They Say?" <u>Wall Street Journal</u>, March 24, 2020.
- 22. Bendavid, E., Mulaney, B., Sood, N., Shah, S., Ling, E., Bromley-Dulfano, R., Lai, C., Weissberg, Z., Saavedra, R., Tedrow, J., Tversky, D., Bogan, A., Kupiec, T., Eichner, D., Gupta, R., Ioannidis, J., & **Bhattacharya, J**. (2020). COVID-19 Antibody Seroprevalence in Santa Clara County, California. medRxiv, 2020.04.14.20062463. https://doi.org/10.1101/2020.04.14.20062463
- Bhattacharya J and Packalen M "Lives vs. Lives: The Global Cost of Lockdown" <u>Spectator</u>, May 13, 2020
- 24. **Bhattacharya J** and Packalen M "Focused COVID-19 Restrictions Will Save Lives in Poor Countries", Financial Post, July 3, 2020.
- 25. **Bhattacharya J** and Agarwal S. "Lift lockdowns, protect the vulnerable, treat Covid like a health issue and not a disaster" The Print. July 24, 2020
- 26. Fronsdal TL, **Bhattacharya J**, Tamang S. (2020) Variation in Health Care Prices Across Public and Private Payers. *National Bureau of Economic Research Working Paper* #27490. https://www.nber.org/papers/w27490
- 27. **Bhattacharya J** and Kulldorff M. "The Case Against Covid Tests for the Young and Healthy" Wall Street Journal, Sept. 3, 2020

Appellate Case: 21-3494 Page: 35 Date Filed: 11/05/2021 Entry ID: 5095038

- 28. **Bhattacharya J**, Packalen M. On the Futility of Contact Tracing. *Inference* 5(3) September (2020) https://inference-review.com/article/on-the-futility-of-contact-tracing
- 29. **Bhattacharya J** and Packalen M. Contact Tracing is Far from Futile: A Reply. Inference 6(1) May (2021) https://inference-review.com/letter/contact-tracing-is-far-from-futile
- 30. **Bhattacharya J.** A Sensible and Compassionate Anti-COVID Strategy. *Imprimis* 49(10). October 2020. https://imprimis.hillsdale.edu/sensible-compassionate-anti-covid-strategy/
- 31. Kulldorff M, Gupta S, and **Bhattacharya J.** <u>Great Barrington Declaration</u>. Oct. 4, 2020.
- 32. Kulldorff M, Gupta S, and **Bhattacharya J.** "Lockdowns do More Harm than Good" New York Post. October 6, 2020.
- 33. **Bhattacharya J**. "Ask Me Anything Dr. Jay Bhattacharya." r/LockdownSkepticism. *Reddit*. October 17, 2020
- 34. **Bhattacharya J.** "It is genuinely possible to shield the vulnerable from Covid, while the rest of us go back to normal" The Telegraph. October 20, 2020
- 35. Kulldorff M, Gupta S, and **Bhattacharya J** "Our COVID-19 plan would minimize mortality and lockdown-induced collateral damage" USA Today, Oct. 22, 2020.
- 36. **Bhattacharya J** "It's Time for an Alternative to Lockdown" <u>Spectator</u>, Oct. 29, 2020.
- 37. Kulldorff M, Gupta S, and **Bhattacharya J** "We Should Focus on Protecting the Vulnerable from COVID Infection" Newsweek, Oct. 30, 2020.
- 38. Kulldorff M and **Bhattacharya J**. "Lockdown Isn't Working" <u>Spectator</u>, Nov. 2, 2020.
- 39. Kulldorff M, Gupta S, and **Bhattacharya J.** Focused Protection: The Middle Ground between Lockdowns and "Let it Rip". <u>Great Barrington Declaration</u>, Nov. 25, 2020.
- 40. **Bhattacharya J** and Makridis C "Facts not fear will stop the pandemic" <u>The</u> Hill, Dec. 3, 2020.
- 41. **Bhattacharya J** and Gupta S. "How to End the Lockdowns Next Month" <u>Wall Street Journal</u>, Dec. 17, 2020.
- 42. Agarwal S and **Bhattacharya J**. "Majority Indians have natural immunity. Vaccinating entire population can cause great harm" The Print. January 11, 2021
- 43. Nicholson T and **Bhattacharya J**. "Appropriate Use of PCR Needed for a Focused Response to the Pandemic" <u>The Hill</u>. January 29, 2021.
- 44. **Bhattacharya J** and Kulldorff M. "Facebook is Silencing Debate on Lockdown." <u>Spiked Online</u>. February 15, 2021.
- 45. **Bhattacharya J** and Kulldorff M. "California's Failed Response to Covid" <u>Eureka</u>. March 12, 2021
- 46. Kulldorff M and **Bhattacharya J.** "One of the Lockdowns' Greatest Casualties Could be Science." The Federalist. March 18, 2021
- 47. **Bhattacharya J** and Kulldorff M. "Vaccine Passports Prolong Lockdowns" <u>Wall Street Journal</u>. April 6, 2021.

Appellate Case: 21-3494 Page: 36 Date Filed: 11/05/2021 Entry ID: 5095038

- 48. **Bhattacharya J.** "Masks for Children, Muzzles for Covid-19 News." Wall Street Journal. April 13, 2021.
- 49. **Bhattacharya J** and Kulldorff M. "Lockdown proponents can't escape the blame for the biggest public health fiasco in history" <u>The Telegraph</u>. April 24, 2021
- 50. **Bhattacharya J** and Licon JA. "The High Costs of Lockdowns: An Interview with Dr. Bhattacharya" Eudaimonia Junction. April 26, 2021.
- 51. **Bhattacharya J**. "Editor's Note: Public Health Loses its Innocence." <u>Collateral Global</u>. May 4, 2021.
- 52. Bhattacharya J. "How the West Can Help India" Spectator. May 6, 2021
- 53. **Bhattacharya J** and Giubilini A. "Immunity Passports: A Debate Between Jay Bhattacharya and Alberto Giubilini" <u>Lockdown Sceptics</u>. May 7, 2021.
- 54. **Bhattacharya J**. "Editor's Note: Children Are A Casualty of Lockdown." <u>Collateral</u> <u>Global</u>. May 11, 2021.
- 55. Kopinska JA, Atella V, **Bhattacharya J**, Miller G (2021) The Changing Relationship between Bodyweight and Longevity in High- and Low- Income Countries.

 National Bureau of Economic Research Working Paper #28813.

 https://www.nber.org/papers/w28813
- 56. Toubat O, Berg AH, Sobhani K, Mulligan K, Hori AM, **Bhattacharya J**, Sood N (2021) Manufacturer Signal-to-Cutoff Threshold Underestimates Cumulative Incidence of SARS-CoV-2 Infection: Evidence from the Los Angeles Firefighters Study. *medRxiv*. **doi:** https://doi.org/10.1101/2021.04.20.21255829.
- 57. Bendavid E, Oh C, **Bhattacharya J**, Ioannidis JPA. Response to Letters Re: 'Assessing mandatory stay- At- Home and business closure effects on the spread of COVID- 19'. *European Journal of Clinical Investigation*. 2021 Mar:e13553. DOI: 10.1111/eci.13553.
- 58. **Bhattacharya J**. "What Does Lockdown and Focused Protection Mean in Nursing Homes?" Collateral Global. May 18, 2021.
- 59. Bhattacharya J. "Cancer and Lockdown" Collateral Global. May 25, 2021.
- 60. Kulldorff M and **Bhattacharya J** "It's mad that 'herd immunity' was ever a taboo phrase" The Telegraph, May 27, 2021
- 61. **Bhattacharya J**, Gupta S, Kulldorff M, "The Beauty of Vaccines and Natural Immunity" <u>Smerconish</u>. June 4, 2021
- 62. **Bhattacharya J** "Stanford professor challenges SJ Merc's "Coronavirus Lessons Learned" assertions" Opportunity Now. June 4, 2021
- 63. **Bhattacharya J** "On the Catastrophic Misapplication of the Precautionary Principle" <u>Collateral Global</u>. June 14, 2021
- 64. Kulldorff M and **Bhattacharya J** "The Ill-Advised Push to Vaccinate the Young" The Hill, June 17, 2021
- 65. Sood N and **Bhattacharya J** "Mandatory Masking of School Children is a Bad Idea" <u>Orange County Register</u>, July 13, 2021.
- 66. Green T and Bhattacharya J "Lockdowns are Killers in the Global South" <u>UnHerd</u>. July 22, 2021.
- 67. Kulldorff M and **Bhattacharya J** "The Smear Campaign Against the Great Barrington Declaration" Spiked. Aug. 2, 2021

Appellate Case: 21-3494 Page: 37 Date Filed: 11/05/2021 Entry ID: 5095038

68. **Bhattacharya J** and Boudreaux D "Eradication of COVID is a Dangerous and Expensive Fantasy" Wall Street Journal. Aug. 4, 2021

BOOKS AND REPORTS (8 total)

- 1. Yoshikawa A, **Bhattacharya J**, Vogt WB eds. <u>Health Economics of Japan: Patients</u>, <u>Doctors</u>, and <u>Hospitals Under a Universal Health Insurance System</u>, Tokyo: University of Tokyo Press, (1996).
- 2. Goldman DP, Hurd M, Shekelle PG, Newberry SJ, Panis CWA, Shang B, **Bhattacharya J**, Joyce GF, Lakdawalla D. <u>Health Status and Medical Treatment of the Future Elderly: Final Report</u>, TR-169-CMS, Santa Monica, CA: RAND (2004).
- 3. **Bhattacharya J**, Currie J, Haider SJ, Variyam J. Evaluating the Impact of School Nutrition Programs: Final Report. E-FAN-04-008, Washington D.C.: Economic Research Service, USDA (2004).
- 4. **Bhattacharya J**, Hyde T, Tu P. <u>Health Economics</u>, London: Palgrave-MacMillan, (2013).
- MaCurdy T, Bhattacharya J, Perlroth D, Shafrin J, Au-Yeung A, Bashour H, Chicklis C, Cronen K, Lipton B, Saneinejad S, Shrestha E, Zaidi S. <u>Geographic Variation in Spending, Utilization, and Quality: Medicare and Medicaid Beneficiaries</u>. Acumen Report to the Institute of Medicine Committee Study of Geographic Variation in Health Care Spending and Promotion of High-Value Health Care, Washington, DC: Institute of Medicine (2013)
- MaCurdy T, Bhattacharya J, Shafrin J, Chicklis C, Cronen K, Friley J, Lipton B, Rogers D, Zaidi S. <u>IOM Study of Geographic Variation: Growth Analysis</u>. Acumen Report to the Institute of Medicine Committee Study of Geographic Variation in Health Care Spending and Promotion of High-Value Health Care, Washington, DC: Institute of Medicine (2013)
- 7. **Bhattacharya J**, Chandra A, Chernew M, Goldman D, Jena A, Lakdawalla D, Malani A, Philipson T. <u>Best of Both Worlds: Uniting Universal Coverage and Personal Choice in Health Care</u>, American Enterprise Institute (AEI) White Paper, Washington DC: AEI Press (2013)
- 8. **Bhattacharya J**, Vail D, Moore D, Vogt W, Choradia N, Do R, Erickson K, Feinberg L, Isara F, Lin E, Narayanan V, Vaikath M, MaCurdy T. <u>Medicare Current State and Future Trends Environment Scan</u>. Center for Medicare and Medicaid Services (CMS) White Paper (2019)

BOOK CHAPTERS (15 total)

Appellate Case: 21-3494 Page: 38 Date Filed: 11/05/2021 Entry ID: 5095038

- 1. **Bhattacharya J**, Garber AM, MaCurdy T. "Cause-Specific Mortality Among Medicare Enrollees," in <u>Inquires in the Economics of Aging</u>, D Wise (ed.), Chicago, IL: University of Chicago Press. (1997).
- 2. MaCurdy T, Nechyba T, **Bhattacharya J**. "Ch. 2: An Economic Model of the Fiscal Impacts of Immigration," <u>The Immigration Debate: Studies on the Economic, Demographic, and Fiscal Effects of Immigration</u>, J Smith (ed.), National Academy of Sciences Commission on Behavioral and Social Sciences and Education: Washington D.C., (1998).
- 3. **Bhattacharya J**, Currie J. "Youths and Nutritional Risk: Malnourished or Misnourished?" in <u>Risky Behavior Among Youths</u>, J Gruber (ed.), (2001).
- 4. Yoshikawa A. and **Bhattacharya J**. "Japanese Health Care" in <u>World Health Systems: Challenges and Perspectives</u>, Bruce Fried and Laura M. Gaydos (eds.), Chicago, IL: Health Administration Press (2002).
- 5. **Bhattacharya J**, Cutler D, Goldman DP, Hurd MD, Joyce GF, Lakdawalla DN, Panis CWA, and Shang B, "Disability Forecasts and Future Medicare Costs" <u>Frontiers in Health Policy Research, Vol. 6</u>, Alan Garber and David Cutler (eds.) Boston, MA: MIT Press (2003).
- 6. **Bhattacharya J**, Choudhry K, and Lakdawalla D. (2007) "Chronic Disease and Trends in Severe Disability in Working Age Populations" Proceedings from the Institute of Medicine workshop, 'Disability in America: An Update,' Institute of Medicine: Washington, D.C.
- 7. **Bhattacharya J**, Garber AM, MaCurdy T. "Trends in Prescription Drug Use by the Disabled Elderly" in <u>Developments in the Economics of Aging</u>, D. Wise (ed), Chicago, IL, University of Chicago Press (2009).
- 8. **Bhattacharya J** and Richmond P "On Work and Health Among the American Poor" in <u>Pathways to Self-Sufficiency: Getting Ahead in an Era Beyond Welfare Reform</u> John Karl Scholz and Carolyn Heinrich (eds), New York, NY, Russell Sage Foundation (2009).
- 9. **Bhattacharya J**, Garber A, MaCurdy T "The Narrowing Dispersion of Medicare Expenditures 1997-2005" in Research Findings in the Economics of Aging, D. Wise (ed.), Chicago, IL, University of Chicago Press (2010)
- 10. **Bhattacharya J**, Bundorf MK, Pace N, and Sood N "Does Health Insurance Make You Fat?" in <u>Economic Aspects of Obesity</u> Michael Grossman and Naci Mocan (eds.), Chicago, IL, University of Chicago Press (2010)
- 11. **Bhattacharya J**, Garber A, Miller M, and Perlroth D "The Value of Progress against Cancer in the Elderly" <u>Investigations in the Economics of Aging</u>, David Wise (ed), Chicago, IL, University of Chicago Press (2012)
- 12. Yoshikawa A. and **Bhattacharya J**. "Japanese Health Care" in <u>World Health Systems: Challenges and Perspectives</u>, 2nd edition, Bruce Fried and Laura M. Gaydos (eds.), Chicago, IL: Health Administration Press (2012).
- 13. Hanson, J., Chandra, A., Moss, E., **Bhattacharya, J.** Wolfe, B., Pollak, S.D.. Brain Development and Poverty: Preliminary Findings. In <u>Biological Consequences of</u>

Appellate Case: 21-3494 Page: 39 Date Filed: 11/05/2021 Entry ID: 5095038

<u>Socioeconomic Inequalities</u>. B. Wolfe, T. Seeman, and W. Evans (Eds). NY: Sage. (2012)

- 14. **Bhattacharya J** "The Diffusion of New Medical Technologies: The Case of Drug-Eluting Stents (A Discussion of Chandra, Malenka, and Skinner)" In <u>Explorations</u> <u>in the Economics of Aging</u>, David Wise (ed.), Chicago, IL, University of Chicago Press (2014).
- 15. MaCurdy T and **Bhattacharya J** "Challenges in Controlling Medicare Spending: Treating Highly Complex Patients" in <u>Insights in the Economics of Aging</u>, David Wise (ed.) Chicago, IL, University of Chicago Press (2015).

ABSTRACTS (3)

- 1. Su CK and **Bhattacharya J**. Longitudinal Hospitalization Costs and Outcomes in the Treatment of the Medicare Breast Cancer Patient. *International Journal of Radiation Oncology Biology Physics* (1996); 36(S1): 282. [abstract]
- 2. Nguyen C, Hernandez-Boussard T., Davies S, **Bhattacharya J**, Khosla R, Curtin C. *Cleft Palate Surgery: Variables of Quality and Patient Safety*. Presented at the 69th Annual American Cleft-Palate Craniofacial Association (2012). [abstract]
- 3. Patel MI, Ramirez D, Agajanian R, Bhattacharya J, Milstein A, Bundorf MK. "The effect of a lay health worker-led symptom assessment intervention for patients on patient-reported outcomes, healthcare use, and total costs." Journal of Clinical Oncology 36(15 Suppl):6502 [abstract]

D. PUBLIC AND PROFESSIONAL SERVICE:

JOURNAL EDITING

Journal of Human Capital, Associate Editor (2015-present)

American Journal of Managed Care, Guest Editor (2016)

Journal of Human Resources, Associate Editor (2011-13)

Forum for Health Economics & Policy, Editorial Board Member (2001-2012)

Economics Bulletin, Associate Editor (2004-2009)

SERVICE ON SCIENTIFIC REVIEW AND ADVISORY COMMITTEES (Selected)

- Standing member of the Health Services Organization and Delivery (HSOD) NIH review panel, 2012-2016
- NIH reviewer (various panels, too numerous to list) 2003-present
- NIH Review Panel Chair: 2018 (P01 review), 2020 (DP1 review).
- Invited Reviewer for the European Research Council, ERC Advanced Grant 2015 RFP
- NIH Stage 2 Challenge Grant Review Panel, July 2009
- Appointed a member of an Institute of Medicine (IOM) panel on the regulation of work hours by resident physicians, 2007-8.
- Standing member of the NIH Social Science and Population Studies Review Panel, Fall 2004-Fall 2008

Appellate Case: 21-3494 Page: 40 Date Filed: 11/05/2021 Entry ID: 5095038

- Invited Reviewer for National Academy of Sciences report on Food Insecurity and Hunger, November 2005.
- Invited Reviewer for the National Academy of Sciences report on the Nutrition Data Infrastructure, December 2004
- Invited Reviewer for the National Institute on Health (NIH) Health Services Organization and Delivery Review Panel, June 2004, Alexandria, VA.
- Invited Reviewer for the Food Assistance and Nutrition Research Program US
 Department of Agriculture Economic Research Service Research Proposal Review Panel,
 June 2004, Stanford, CA.
- Invited Reviewer for the National Institute on Health (NIH) Social Science and Population Studies Review Panel, February 2004, Alexandria, VA.
- Invited Reviewer for the National Institute on Health (NIH) Social Sciences and Population Studies Review Panel, November 2003, Bethesda, MD.
- Invited Reviewer for the National Institute on Health (NIH) Social Science, Nursing, Epidemiology, and Methods (3) Review Panel, June 2003, Bethesda, MD.
- Invited Reviewer for the Food Assistance and Nutrition Research Program US
 Department of Agriculture Economic Research Service Research Proposal Review Panel,
 August 2002.
- Research Advisory Panel on Canadian Disability Measurement, Canadian Human Resources Development Applied Research Branch, June 2001 in Ottowa, Canada.
- Invited Reviewer for the National Institute of Occupational Safety and Health R18 Demonstration Project Grants Review panel in July 2000, Washington D.C.
- Research Advisory Panel on Japanese Health Policy Research. May 1997 at the Center for Global Partnership, New York, NY.

TESTIMONY TO GOVERNMENTAL PANELS AND AGENCIES (9)

- US Senate Dec. 2020 hearing of the Subcommittee on Homeland Security and Governmental Affairs. Testimony provided on COVID-19 mortality risk, collateral harms from lockdown policies, and the incentives of private corporations and the government to invest in research on low-cost treatments for COVID-19 disease
- "Roundtable on Safe Reopening of Florida" led by Florida Gov. Ron DeSantis. September 2020.
- "Evaluation of the Safety and Efficacy of COVID-19 Vaccine Candidates" July 2020 hearing of the House Oversight Briefing to the Economic and Consumer Policy Subcommittee.
- US Senate May 2020 virtual roundtable. Safely Restarting Youth Baseball and Softball Leagues, invited testimony
- "Population Aging and Financing Long Term Care in Japan" March 2013 seminar at the Japanese Ministry of Health.
- "Implementing the ACA in California" March 2011 testimony to California Legislature Select Committee on Health Care Costs.
- "Designing an Optimal Data Infrastructure for Nutrition Research" June 2004 testimony to the National Academy of Sciences commission on "Enhancing the Data Infrastructure

Appellate Case: 21-3494 Page: 41 Date Filed: 11/05/2021 Entry ID: 5095038

- in Support of Food and Nutrition Programs, Research, and Decision Making," Washington D.C.
- "Measuring the Effect of Overtime Reform" October 1998 testimony to the California Assembly Select Committee on the Middle Class, Los Angeles, CA.
- "Switching to Weekly Overtime in California." April 1997 testimony to the California Industrial Welfare Commission, Los Angeles, CA.

REFEREE FOR RESEARCH JOURNALS

American Economic Review; American Journal of Health Promotion; American Journal of Managed Care; Education Next; Health Economics Letters; Health Services Research; Health Services and Outcomes Research Methodology; Industrial and Labor Relations Review; Journal of Agricultural Economics; Journal of the American Medical Association; Journal of Health Economics; Journal of Health Policy, Politics, and Law; Journal of Human Resources; Journal of Political Economy; Labour Economics; Medical Care; Medical Decision Making; Review of Economics and Statistics; Scandinavian Journal of Economics; Social Science and Medicine; Forum for Health Economics and Policy; Pediatrics; British Medical Journal

Trainee Peter Groeneveld, MD, MS Jessica Haberer, MD, MS Melinda Henne, MD, MS Byung-Kwang Yoo, MD, PhD Hau Liu, MD, MS, MBA Eran Bendavid, MD, MS Kaleb Michaud, MS, PhD	Current Position Associate Professor of Medicine, University of Pennsylvania Assistant Professor of Medicine, Harvard Medical School Director of Health Services Research, Bethesda Naval Hospital Associate Professor, Public Health, UC Davis Chief Medical Officer at Shanghai United Family Hospital Assistant Professor, General Medicine Disciplines, Stanford University Associate Professor of Medicine, Rheumatology and Immunology, University of Nebraska Medical Center
Kanaka Shetty, MD	Natural Scientist, RAND Corporation
Christine Pal Chee, PhD	Associate Director of the Health Economics Resource Center, Palo Alto VA
Matthew Miller, MD	VP Clinical Strategy and Head of Innovation, Landmark Health
Vincent Liu, MD	Research Scientist, Kaiser Permanente Northern California Division of Research
Daniella Perlroth, MD	Chief Data Scientist, Lyra Health
Crystal Smith-Spangler, MD	Internist, Palo Alto Medical Foundation
Barrett Levesque, MD MS	Assistant Professor of Clinical Medicine, UC San Diego Health System
Torrey Simons, MD	Clinical Instructor, Department of Medicine, Stanford University
Nayer Khazeni, MD	Assistant Professor of Medicine (Pulmonary and Critical Care Medicine),
	Stanford University
Monica Bhargava, MD MS	Assistant Clinical Professor, UCSF School of Medicineilan
Dhruv Kazi, MD	Assistant Professor, UCSF School of Medicine
Zach Kastenberg, MD	Resident, Department of Surgery, Stanford University
Kit Delgado, MD	Assistant Professor, Department of Emergency Medicine and Faculty Fellow, University of Pennsylvania
Suzann Pershing, MD	Chief of Ophtalmology for the VA Palo Alto Health Care System
KT Park, MD	Assistant Professor, Department of Medicine, Stanford University
	nD Associate Professor, Department of Medicine, Stanford University
Sanjay Basu, MD	Assistant Professor, Department of Medicine, Stanford University
Marcella Alsan, MD, PhD	Assistant Professor, Department of Medicine (CHP/PCOR), Stanford Univ.
David Chan, MD, PhD	Assistant Professor, Department of Medicine (CHP/PCOR), Stanford Univ.
Karen Eggleston, PhD	Senior Fellow, Freeman Spogli Institute, Stanford University
Kevin Erickson, MD	Assistant Professor, Department of Nephrology, Baylor College of Medicine
Ilana Richman, MD	VA Fellow at CHP/PCOR, Stanford University

Appellate Case: 21-3494 Page: 42 Date Filed: 11/05/2021 Entry ID: 5095038

Alexander Sandhu, MD	VA Fellow at CHP/PCOR, Stanford University
Michael Hurley	Medical Student, Stanford University

Manali Patel, MD Instructor, Department of Medicine (Oncology), Stanford University
Dan Austin, MD Resident Physician, Department of Anesthesia, UCSF School of Medicine
Anna Luan, MD Resident Physician, Department of Medicine, Stanford University

Louse Wang Medical Student, Stanford University

Christine Nguyen, MD Resident Physician, Department of Medicine, Harvard Medical School Instructor, Department of Medicine (Pulmonary and Critical Care Medicine),

Stanford University

Eugene Lin, MD Fellow, Department of Medicine (Nephrology), Stanford University Eric Sun, MD Assistant Professor, Department of Anesthesia, Stanford University

Sejal Hathi Medical Student, Stanford University
Ibrahim Hakim Medical Student, Stanford University
Archana Nair Medical Student, Stanford University
Trishna Narula Medical Student, Stanford University
Daniel Vail Medical Student, Stanford University
Tej Azad Medical Student, Stanford University

Jessica Yu, MD Fellow, Department of Medicine (Gastroenterology), Stanford University

Daniel Vail Medical Student, Stanford University

Alex Sandhu, MD Fellow, Department of Medicine (Cardiology), Stanford University
Matthew Muffly, MD Clinical Assistant Professor, Dept. of Anesthesia, Stanford University

Dissertation Committee Memberships

Ron Borzekowski	Ph.D. in Economics	Stanford University	2002
Jason Brown	Ph.D. in Economics	Stanford University	2002
Dana Rapaport	Ph.D. in Economics	Stanford University	2003
Ed Johnson	Ph.D. in Economics	Stanford University	2003
Joanna Campbell	Ph.D. in Economics	Stanford University	2003
Neeraj Sood [*]	Ph.D. in Public Policy	RAND Graduate School	2003
James Pearce	Ph.D. in Economics	Stanford University	2004
Mikko Packalen	Ph.D. in Economics	Stanford University	2005
Kaleb Michaud*	Ph.D. in Physics	Stanford University	2006
Kyna Fong	Ph.D. in Economics	Stanford University	2007
Natalie Chun	Ph.D. in Economics	Stanford University	2008
Sriniketh Nagavarapu	Ph.D in Economics	Stanford University	2008
Sean Young	Ph.D. in Psychology	Stanford University	2008
Andrew Jaciw	Ph.D. in Education	Stanford University	2010
Chirag Patel	Ph.D. in Bioinformatics	Stanford University	2010
Raphael Godefroy	Ph.D. in Economics	Stanford University	2010
Neal Mahoney	Ph.D. in Economics	Stanford University	2011
Alex Wong	Ph.D. in Economics	Stanford University	2012
Kelvin Tan	Ph.D. in Management Science	Stanford University	2012
Animesh Mukherjee	Masters in Liberal Arts Program	Stanford University	2012
Jeanne Hurley	Masters in Liberal Arts Program	Stanford University	2012
Patricia Foo	Ph.D. in Economics	Stanford University	2013
Michael Dworsky	Ph.D. in Economics	Stanford University	2013
Allison Holliday King	Masters in Liberal Arts Program	Stanford University	2013
Vilsa Curto	Ph.D. in Economics	Stanford University	2015
Rita Hamad	Ph.D. in Epidemiology	Stanford University	2016
Atul Gupta	Ph.D. in Economics	Stanford University	2017
Yiwei Chen	Ph.D. in Economics	Stanford University	2019
Yiqun Chen	Ph.D. in Health Policy	Stanford University	2020
Min Kim	Ph.D. in Economics	Iowa State Univ.	2021
Bryan Tysinger	Ph.D. in Public Policy	RAND Graduate School	2021

Appellate Case: 21-3494 Page: 43 Date Filed: 11/05/2021 Entry ID: 5095038

E. GRANTS AND PATENTS

PATENT (2)

- 1. "Environmental Biomarkers for the Diagnosis and Prognosis for Type 2 Diabetes Mellitus" with Atul Butte and Chirag Patel (2011), US Patent (pending).
- 2. "Health Cost and Flexible Spending Account Calculator" with Schoenbaum M, Spranca M, and Sood N (2008), U.S. Patent No. 7,426,474.

GRANTS AND SUBCONTRACTS (42)

CURRENT (6)

2019-2020 Funder: Acumen, LLC.

Title: Quality Reporting Program Support for the Long-Term Care Hospital, Inpatient Rehabilitation Facility, Skilled Nursing Facility QRPs and Nursing

Home Compare

Role: PI

2018-2020 Funder: Acumen, LLC.

Title: Surveillance Activities of Biologics

Role: PI

2018-2020 Funder: France-Stanford Center for Interdisciplinary Studies

Title: A Nutritional Account of Global Trade: Determinants and Health

Implications Role: PI

2017-2023 Funder: National Institutes of Health

Title: The Epidemiology and Economics of Chronic Back Pain

Role: Investigator (PI: Sun)

2017-2021 Funder: National Institutes of Health

Title: Big Data Analysis of HIV Risk and Epidemiology in Sub-Saharan Africa

Role: Investigator (PI: Bendavid)

2016-2020 Funder: Acumen, LLC.

Title: MACRA Episode Groups and Resource Use Measures II

Role: PI

PREVIOUS (36)

2016-2018 Funder: University of Kentucky

Title: Food acquisition and health outcomes among new SNAP recipients

since the Great Recession

Role: PI

2015-2019 Funder: Alfred P. Sloan Foundation

Appellate Case: 21-3494 Page: 44 Date Filed: 11/05/2021 Entry ID: 5095038

	Title: Public versus Private Provision of Health Insurance Role: PI
2015-2019	Funder: Natural Science Foundation
	Title: Health Insurance Competition and Healthcare Costs
	Role: Investigator (PI: Levin)
2014-2015	Funder: The Centers for Medicare and Medicaid Services
	Title: Effect of Social Isolation and Loneliness on Healthcare Utilization Role: PI
2014-2015	Funder: AARP
	Title: The Effect of Social Isolation and Loneliness on Healthcare Utilization and Spending among Medicare Beneficiaries
2012 2012	Role: PI
2013-2019	Funder: National Bureau of Economic Research
	Title: Innovations in an Aging Society
2012 2014	Role: PI
2013-2014	Funder: Robert Wood Johnson Foundation
	Title: Improving Health eating among Children through Changes in Supplemental Nutrition Assistance Program (SNAP)
	Role: Investigator (PI: Basu)
2011-2016	Funder: National Institutes of Health (R37)
2011 2010	Title: Estimating the Potential Medicare Savings from Comparative
	Effectiveness Research
	Role: PI Subaward (PI: Garber)
2011-2016	Funder: National Institute of Aging (P01)
	Title: Improving Health and Health Care for Minority and Aging Populations Role: PI Subcontract (PI: Wise)

Appellate Case: 21-3494 Page: 45 Date Filed: 11/05/2021 Entry ID: 5095038

Funder: National Institutes of Health Title: Clinic, Family & Community Collaboration to Treat Overweight and Obese Children
Role: Investigator (PI: Robinson) Funder: Agency for Health, Research and Quality (R01) Title: The Effects of Private Health Insurance in Publicly Funded Programs Role: Investigator (PI: Bundorf)
Funder: Agency for Healthcare Research and Quality Title: G-code" Reimbursement and Outcomes in Hemodialysis Role: Investigator (PI: Erickson)
Funder: University of Southern California Title: The California Medicare Research and Policy Center Role: PI
Funder: University of Georgia Title: Natural Experiments and RCT Generalizability: The Woman's Health Initiative Role: PI
Funder: National Bureau of Economic Research Title: Racial Disparities in Health Care and Health Among the Elderly Role: PI
Funder: National Institute of Aging (P30) Title: Center on the Demography and Economics of Health and Aging Role: PI (2011-2020)
Funder: Rand Corporation Title: Natural Experiments and RCT Generalizability: The Woman's Health Initiative Role: PI
Funder: American Heart Association Title: AHA-PRT Outcomes Research Center Role: Investigator (PI: Hlatky)
Funder: National Institute of Aging (R01) Title: The Economics of Obesity Role: PI
Funder: Veterans Administration, Health Services Research and Development Service Title: Quality of Practices for Lung Cancer Diagnosis and Staging
Role: Investigator Funder: Stanford Center for Demography and Economics of Health and Aging Title: The HIV Epidemic in Africa and the Orphaned Elderly

Appellate Case: 21-3494 Page: 46 Date Filed: 11/05/2021 Entry ID: 5095038

	Role: PI
2007	Funder: University of Southern California
	Title: The Changes in Health Care Financing and Organization Initiative
	Role: PI
2006-2010	Funder: National Institute of Aging (KO2)
	Title: Health Insurance Provision for Vulnerable Populations
	Role: PI
2006-2010	Funder: Columbia University/Yale University
	Title: Dummy Endogenous Variables in Threshold Crossing Models, with
	Applications to Health Economics Role: PI
2006-2007	Funder: Stanford Center for Demography and Economics of Health and Aging
2000-2007	Title: Obesity, Wages, and Health Insurance
	Role: Pl
2005-2009	Funder: National Institute of Aging (P01 Subproject)
	Title: Medical Care for the Disabled Elderly
	Role: Investigator (PI: Garber)
2005-2008	Funder: National Institute of Aging (R01)
	Title: Whom Does Medicare Benefit?
	Role: PI Subcontract (PI: Lakdawalla)
2002	Funder: Stanford Center for Demography and Economics of Health and Aging
	Title: Explaining Changes in Disability Prevalence Among Younger and Older
	American Populations Role: PI
2001-2003	Funder: Agency for Healthcare Research and Quality (R01)
2001 2003	Title: State and Federal Policy and Outcomes for HIV+ Adults
	Role: PI Subcontract (PI: Goldman)
2001-2002	Funder: National Institute of Aging (R03)
	Title: The Economics of Viatical Settlements
	Role: PI
2001-2002	Funder: Robert Woods Johnson Foundation
	Title: The Effects of Medicare Eligibility on Participation in Social Security
	Disability Insurance
2001-2002	Role: PI Subcontract (PI: Schoenbaum) Funder: USDA
2001-2002	Title: Evaluating the Impact of School Breakfast and Lunch
	Role: Investigator
2001-2002	Funder: Northwestern/Univ. of Chicago Joint Center on Poverty
	Title: The Allocation of Nutrition with Poor American Families
	Role: PI Subcontract (PI: Haider)
2000-2002	Funder: National Institute on Alcohol Abuse & Alcoholism (R03)
	Title: The Demand for Alcohol Treatment Services
	Role: PI
2000-2001	Funder: USDA
	Title: How Should We Measure Hunger?

Appellate Case: 21-3494 Page: 47 Date Filed: 11/05/2021 Entry ID: 5095038

Role: PI Subcontract (PI: Haider)

F. SCHOLARSHIPS AND HONORS

- Phi Beta Kappa Honor Society, 1988
- Distinction and Departmental Honors in Economics, Stanford University, 1990
- Michael Forman Fellowship in Economics, Stanford University, 1991-1992
- Agency for Health Care Policy and Research Fellowship 1993-1995
- Outstanding Teaching Assistant Award, Stanford University, Economics, 1994
- Center for Economic Policy Research, Olin Dissertation Fellowship, 1997-1998
- Distinguished Award for Exceptional Contributions to Education in Medicine, Stanford University, 2005, 2007, and 2013.
- Dennis Aigner Award for the best applied paper published in the *Journal of Econometrics*, 2013

Appellate Case: 21-3494 Page: 48 Date Filed: 11/05/2021 Entry ID: 5095038