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HOW TO SAVE A LIFE

Successful Models for Protecting Communities from COVID-19

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INTRODUCTION

The United States has made many mistakes in its response to the COVID-19 pandemic. But the most significant mistake of all has been the *inability to properly assess risks*.

The most important example of this problem is *demographic risk*. American policymakers, journalists, and even public health experts have struggled to objectively assess the scientific evidence regarding how the novel coronavirus affects different people by age, residential status, and comorbidities, among other factors. This failure directly led to tragedy; for example, in 2020, nearly 40% of all deaths from COVID-19 took place in nursing homes and assisted living facilities housing 0.6% of the U.S. population.[1]

Another key element of this problem is *social risk*. Prior to 2020, it was well understood in public health circles that non-pharmaceutical interventions like economic lockdowns and school closures have serious health, economic, and social costs, and that the risks of SARS-CoV-2 transmission should be carefully weighed against those costs. During the COVID-19 pandemic, this empirically rigorous approach was discarded by policymaking and public health elites, and poorly understood by journalists.

A third problem is *expertise risk*. The novel coronavirus is by definition novel. Our scientific understanding of the virus has evolved over time, and yet repeatedly, policymakers, public health experts, and journalists have asserted scientific certainty where it was not warranted. Social media platforms like YouTube and Twitter actively censored legitimate scientific debate about managing COVID-19 and reducing transmission, citing assertions by academic specialists of inconsistent quality. The scientific method, in its truest form, expresses humility and skepticism toward conventional hypotheses. Restriction of open debate by tech platforms and policymakers has only deepened public mistrust of authorities.

A fourth problem that has come to the fore in recent months is *immunologic risk*. Thanks to the remarkable success of Operation Warp Speed, COVID-19 vaccines are safe and highly effective at protecting vaccinated individuals from serious illness and death, and at reducing SARS-CoV-2 transmission. Despite these facts, policymakers have made inconsistent and unscientific pronouncements about vaccines; for example, giving Americans the false impression that vaccination does not reduce transmission. Policymakers have been reluctant to account for evidence that recovery from prior infection can be as powerful, if not more so, than vaccination in protecting individuals from future illness.

Many of the policy problems we are wrestling with today—including prolonged school closures, labor shortages, and vaccine hesitancy—are a direct result of these failures in risk assessment. In this written testimony, I will focus on demographic, social, and immunologic risk, and identify state governments where data-driven policymaking has worked to save both lives and livelihoods.

DEMOGRAPHIC RISK

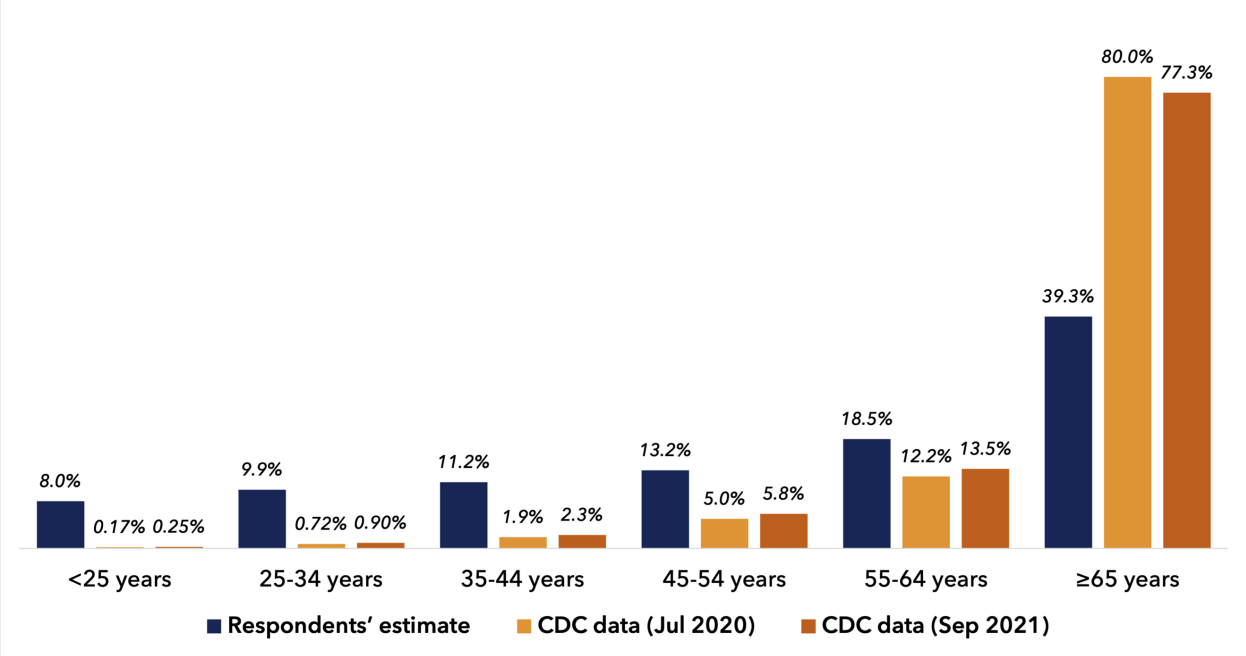
It was clear as early as April 2020 that morbidity and mortality from COVID-19 were heavily concentrated in the elderly. According to CDC data as of April 17, 2020, of the 13,130 U.S. deaths associated with COVID-19, 78% were in individuals over 65 years of age. In the most recent CDC data set, from September 22, 2021, of 672,021 U.S. deaths associated with COVID, 77% were in individuals over 65.

[1] G. Girvan and A. Roy, Nursing Homes & Assisted Living Facilities Account for 38% of COVID-19 deaths. The Foundation for Research on Equal Opportunity. 2021 Jan 30: https://freopp.org/the-covid-19-nursing-home-crisis-by-the-numbers-3a47433c3f70; accessed September 24, 2021.

By contrast, the risk of death from COVID in children has remained extremely low. In April 2020, 0.023% of COVID deaths had occurred in individuals younger than 15. In September 2021, 0.047% had. Younger adults aged 25-44 represented 3.1% of COVID deaths in April 2020, and 3.2% in September 2021.

Put simply: the age distribution of serious illness and death from COVID-19 has remained remarkably stable over time. And yet our policy response to the pandemic has inconsistently taken this evidence into account, and press coverage of the epidemic has left Americans largely unaware of demographic risks.

Figure 1. Americans' Perception of the Risk of Death from COVID-19 by Age
(July 2020 vs. actual CDC data from July 2020 & September 2021)



In 2020, Americans vastly overestimated the risk of COVID-19 to younger individuals, and underestimated the risk to older individuals. While Americans appreciated some difference in the relative risk of COVID death by age, they significantly underestimated the degree. *(Source: Centers for Disease Control and Prevention; Franklin Templeton-Gallup Economics of Recovery Study)*

In July 2020, Gallup conducted a survey for Franklin Templeton of 10,014 adults, finding that Americans were unaware of the significance of the differential risk of COVID-19 illness and death by age.[2] "Americans overestimate the risk of death from COVID-19 for people aged 24 and younger by a factor of 50," wrote Sonal Desai, Chief Investment Officer of Franklin Templeton Fixed Income, in an analysis of the survey. "They think the risk for

[2] S. Desai, On My Mind: They Blinded Us From Science. Franklin Templeton. 2020 Jul 29: https://www.franklintempletonnordic.com/investor/article?contentPath=html/ftthinks/common/cio-views/on-my-mind-they-blinded-us-from-science.html; accessed September 24, 2021.

people aged 65 and older is half of what it actually is." She found the discrepancies "staggering."

"Americans still misperceive the risks of death from COVID-19 for different age cohorts—to a shocking extent," concluded Desai. Based on the Gallup data, "the misperception is greater for those who identify as Democrats, and for those who rely more on social media for information."

This misperception had real effects on the policy response to the pandemic. As noted above, nearly 40% of deaths from COVID-19 in 2020 occurred in long-term care facilities housing just 0.6% of the U.S. population. Infamously, New York, New Jersey, Michigan, and other states forced nursing homes to accept elderly individuals being discharged from hospitals with active SARS-CoV-2 infections, contributing to the spread and lethality of the virus. Until the Centers for Medicare and Medicaid Services began mandating the reporting of nursing home fatalities from COVID, several states were simply not measuring COVID deaths in long-term care facilities.[3] An investigation by New York Attorney General Letitia James found that the state had deliberately undercounted nursing home deaths due to COVID by as much as 50%.[4]

In addition, the decision by many state and local governments to close primary and secondary schools was disconnected from the actual data on both risks to children from COVID-19 and also the risks of transmission of SARS-CoV-2 from children to adults.[5] In Europe, where schools largely stayed open in 2020, especially for children under the age of 12, there were no COVID-19 outbreaks in classroom settings. U.S. states that have reopened schools have encountered few problems with COVID outbreaks, which raises the question of why so many schools were closed.

Obesity is a risk factor for severe illness and death from COVID-19, one that policymakers and public health officials have been understandably uncomfortable with highlighting. A CDC study found that severely obese individuals—those with a Body Mass Index greater or equal to 45—were 33% more likely to require hospitalization from COVID, and twice as likely to require mechanical ventilation, relative to those at a healthy weight (BMI between 18.5 and 25). Greater awareness of these higher risks could have encouraged overweight Americans to take greater precautions.[6]

SOCIAL RISK

In 2020, during a Senate hearing, when asked to consider the tradeoffs inherent in shutting down the economy to slow down the transmission of SARS-CoV-2, presidential COVID adviser Anthony Fauci freely admitted that he had no expertise on the topic. "There are a number of other people who…give advice…about the need to get the country back open again, and economically. I don't give advice about economic things," he said. The

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[3] A. Roy, The Most Important Coronavirus Statistic: 42% Of U.S. Deaths Are From 0.6% Of The Population. *Forbes*. 2020 May 26: https://www.forbes.com/sites/theapothecary/2020/05/26/nursing-homes-assisted-living-facilities-0-6-of-the-u-s-population-43-of-u-s-covid-19-deaths/?sh=568ebeea74cd; accessed September 24, 2021.

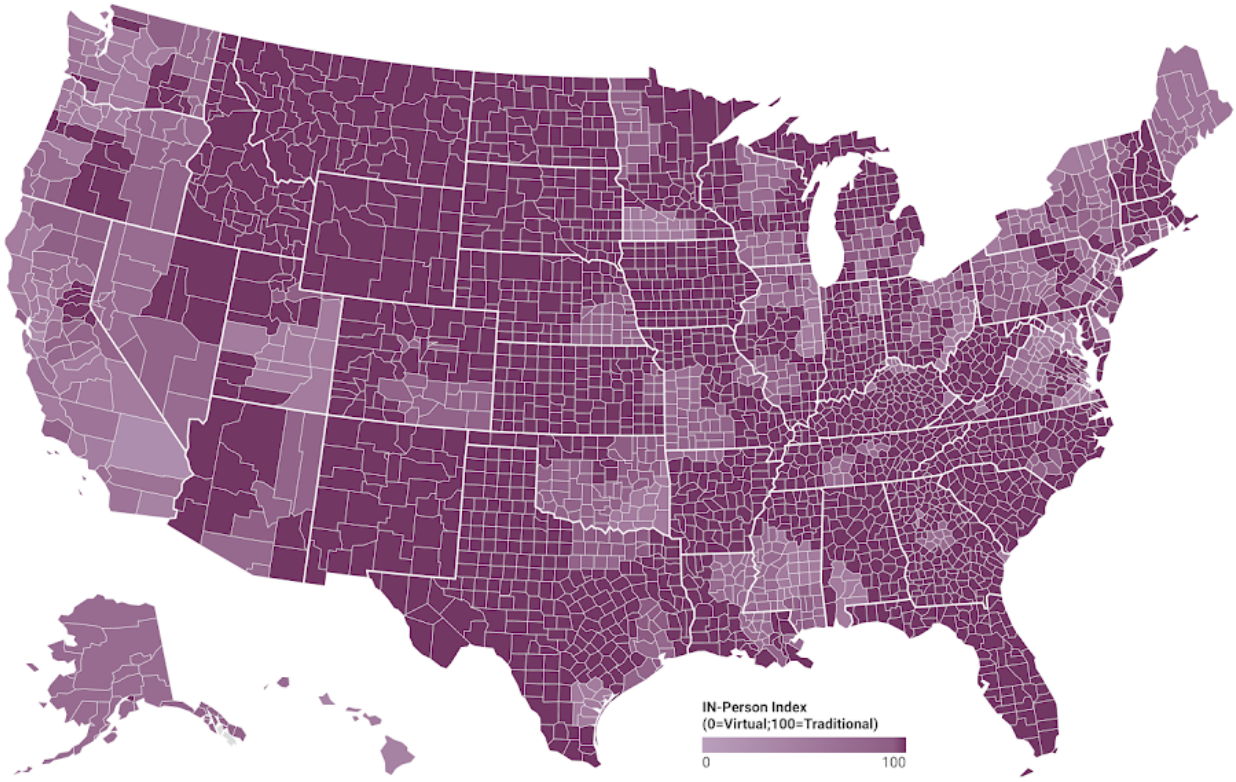
[4] L. James, Nursing Home Response to COVID-19 Pandemic. New York State Office of the Attorney General. 2021 Jan 30: https://ag.ny.gov/sites/default/files/2021-nursinghomesreport.pdf; accessed September 24, 2021.

[5] D. Lips et al., Reopening America's Schools and Colleges During COVID-19. The Foundation for Research on Equal Opportunity. 2020 Jul 1: https://freopp.org/reopening-americas-schools-and-colleges-during-covid-19-bdb35e3e32c4; accessed September 24, 2021.

[6] L. Kompaniyets et al., Body Mass Index and Risk for COVID-19-Related Hospitalization, Intensive Care Unit Admission, Invasive Mechanical Ventilation, and Death–United States, March–December 2020. 12 Mar 2021: CDC Morbidity and Mortality Weekly Report. https://www.cdc.gov/mmwr/volumes/70/wr/mm7010e4.htm; accessed September 24, 2021.

indifference of Fauci and many other policymakers to the tradeoffs inherent in economic and social restrictions contributed greatly to mistrust of public health authorities, and has done little to protect lives.

Figure 2. In-Person Learning at K-12 Schools (As of June 29, 2021)



In June 2021, K-12 schools remained partially or fully closed for in-person instruction in major population centers, despite overwhelming evidence that reopening schools was safe. Burbio's In-Person Index weights virtual instruction at 0%, 2-3 days per week of in-person instruction at 50%, and 5 days per week of in-person instruction at 100%. *(Source: Burbio School Opening Tracker)*

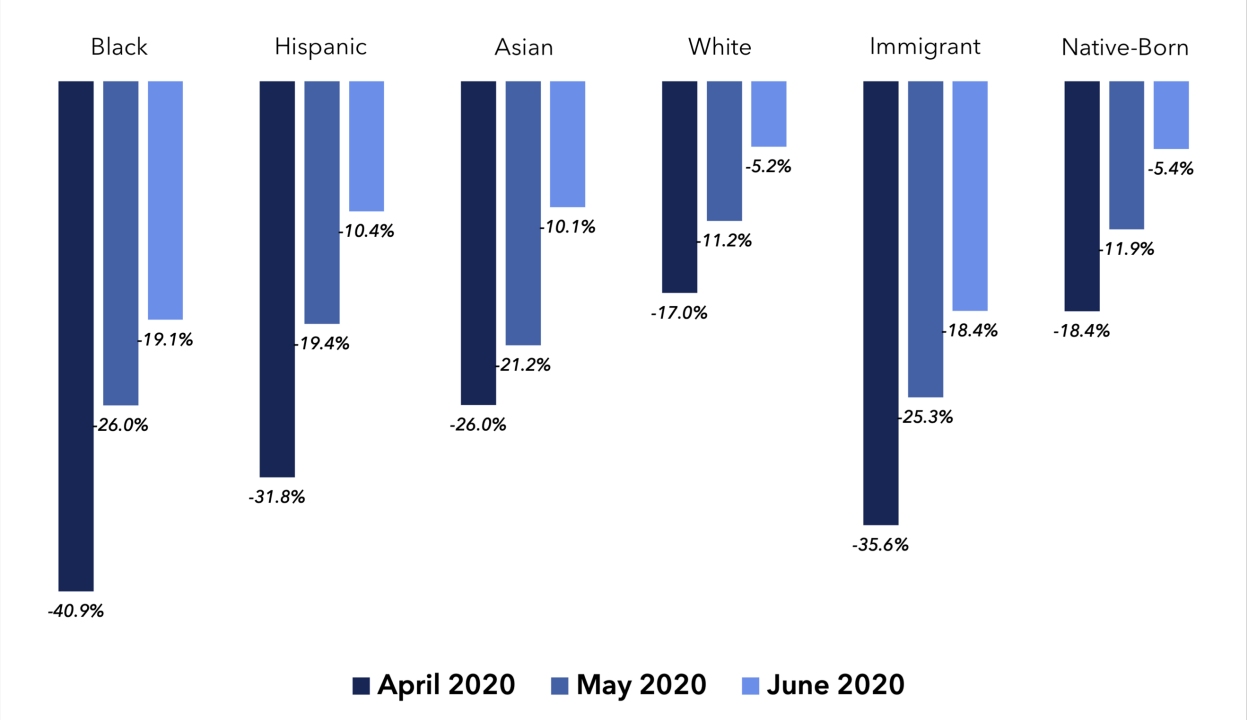
Take school closures. The evidence is overwhelming that school closures are harmful to children, especially those whose parents lack broadband internet or the resources to send their children to private schools. In May 2021, 66% of White fourth-graders were attending fully in-person schools, compared to 41% of Black, 45% of Hispanic, and 27% of Asian fourth-graders. 57% of white eighth-graders were fully in-person, compared to 37% of Black and Hispanic children, and 20% of Asians.[7]

[7] Institute of Education Sciences, Monthly School Survey Dashboard. https://ies.ed.gov/schoolsurvey/; accessed September 24, 2021.

McKinsey & Co. has estimated that the annual impact of 2020-21 school closures "could amount to $128 billion to $188 billion every year as this cohort enters the workforce."[8] School closures might have been justified, if there had been any scientific evidence that school closures reduce SARS-CoV-2 transmission, but there has been none.

Economic restrictions disproportionately affected minority and immigrant households. In April 2020, the first month of widespread lockdowns, Black-owned small businesses saw a 41% reduction in activity, compared to 17% for White businesses. Immigrant-owned businesses saw a 36% drop in activity, relative to an 18% drop for small businesses owned by native-born Americans.[9]

Figure 3. Reduction in Small Business Activity, by Ownership (vs. February 2020)



Black, Hispanic, and immigrant-owned businesses were most adversely affected by economic lockdowns. All groups improved business activity in states that reopened their economies. *(Source: R. Fairlie, Journal of Economics & Management Strategy)*

[8] E. Dorn et al., COVID-19 and education: The lingering effects of unfinished learning. McKinsey & Company. 27 Jul 2021: https://www.mckinsey.com/industries/public-and-social-sector/our-insights/covid-19-and-education-the-lingering-effects-of-unfinished-learning; accessed September 24, 2021.

[9] R. Fairlie, The impact of COVID-19 on small business owners: Evidence from the first three months after widespread social-distancing restrictions. *Journal of Economics & Management Strategy*. 27 Aug 2020: https://onlinelibrary.wiley.com/doi/full/10.1111/jems.12400; accessed September 24, 2021.

Thankfully, these percentages improved as some states lifted their economic restrictions. But, broadly speaking, vulnerable communities were most harmed by lockdowns. And, importantly, there is little evidence that lockdowns did much to reduce COVID transmission. In 2020, California, Texas, and Florida all had similar per-capita case and fatality figures, despite severe restrictions in California and relatively limited ones in Texas and Florida.

IMMUNOLOGIC RISK

However, in 2021, Texas and Florida have lagged behind California, in part due to lower vaccination rates. 71% of Californians have received at least one COVID-19 vaccine dose, compared to 67% in Florida and 60% in Texas. 59% of Californians are fully vaccinated, compared to 57% in Florida and 51% in Texas. Skepticism and mistrust about vaccines is considerable, especially in minority populations and rural regions.[10]

Vaccine skepticism has a long history in the U.S., and presents a challenging problem for public health officials. Unfortunately, policymakers have done a number of things to undermine confidence in COVID-19 vaccines, despite their remarkable safety and efficacy via the Operation Warp Speed program.

In 2020, partisan opposition to the Trump administration undermined efforts to accelerate approval of mRNA vaccines. At the vice presidential debate in October 2020, then-Sen. Kamala Harris said, "If Donald Trump tells us that we should take it, I'm not taking it." Then-New York Gov. Andrew Cuomo added, "I think it's going to be a very skeptical public about taking the vaccine, and they should be." Notably, Cuomo at the time was being hailed as "America's Governor" by journalists who supported his COVID-19 policies. Even though there was ample evidence in the fall of 2020 supporting the emergency use of mRNA vaccines in high-risk populations, FDA authorization was delayed until after the election for political reasons. This series of events may have cost tens of thousands of lives.

Most importantly, in response to a July 2021 COVID-19 outbreak among vaccinated individuals in Provincetown, Massachusetts, CDC officials recommended "universal masking in indoor public settings" irrespective of vaccination status. Leaked press reports implied that vaccination does not reduce viral transmission, and that COVID-19 was still highly dangerous to recently vaccinated individuals. The CDC's insistence on universal masking—even in schools for young children—also implied that vaccination does not significantly protect people from COVID-19.

While the CDC's *recommendations* imply that the delta variant is highly dangerous to vaccinated individuals and young children, its *data* tell the opposite story. As of September 20, 2021, more than 180 million people have been fully vaccinated in the U.S. During that timeframe, the CDC has received reports of 19,136 individuals who were vaccinated, tested positive for COVID-19, and were hospitalized (with or without COVID-19 symptoms): a hospitalization rate of 0.01%, and a mortality rate of 0.002%.[11] 86% of deaths and 69% of non-fatal hospitalizations occurred in people over 65.

Importantly, the evidence is strong that vaccines do result in reduced transmission of SARS-CoV-2. While viral loads can appear similar in unvaccinated individuals and vaccinated individuals with breakthrough infections, viral loads decrease faster in vaccinated

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[10] S. Sgaier, Meet the Four Kinds of People Holding Us Back From Full Vaccination. *The New York Times*, May 18, 2021. https://www.nytimes.com/interactive/2021/05/18/opinion/covid-19-vaccine-hesitancy.html; accessed September 24, 2021.

[11] Centers for Disease Control and Prevention. Hospitalized or fatal COVID-19 vaccine breakthrough cases reported to CDC as of September 20, 2021. https://www.cdc.gov/vaccines/covid-19/health-departments/breakthrough-cases.html; accessed September 24, 2021.

individuals, as one would expect, leading to less transmission, even with a highly infective variant like Delta.[12]

NEAR-TERM POLICY RECOMMENDATIONS

There are several key steps that Congress can take to protect both lives and livelihoods in the next six months.

First, Congress and the White House should use their oversight and executive roles to ensure that funds directed to K-12 schools are being used to fully restore in-person learning. Congress should redirect CARES Act and follow-on funding to parents' Education Savings Accounts with which they can educate their children, especially in districts where schools remain closed for in-person education.[13]

Second, the Biden administration should reexamine its effort to impose a federal vaccine mandate on private businesses with more than 100 employees. Vaccine mandates for nursing homes funded by Medicare, and for federal workers, are a different matter, and the case for requiring nursing home staff to receive a COVID-19 vaccine is compelling, especially for individuals who have not successfully recovered from a SARS-CoV-2 infection and/or have clinical contraindications for the vaccine, given what we have discussed regarding the disproportionate risk of severe COVID-19 illness and death among nursing home residents, even if vaccinated.

However, the broader private-sector vaccine mandate, which will be enforced through an Emergency Temporary Standard issued by the Occupational Safety and Health Administration, raises many questions of legality, enforcement, and practicality. As FREOPP scholar Gregg Girvan writes, "What will constitute noncompliance, how will employers verify compliance among their workers" [in a HIPAA-compliant manner] "and what will trigger the penalties that the administration has said will be $14,000 per violation?...There is also a question as to whether the testing requirement, which kicks in should an employee refuse vaccination, would be legally too burdensome for employers since the administration has said businesses or employers will be expected to shoulder the cost."[14]

While no U.S. community has been spared from the damage caused by COVID-19, those that have fared best are those that have prudently limited their imposition of economic and social restrictions, as in Texas and Florida, while also encouraging widespread vaccine adoption. It will be essential, as we go forward, to objectively interrogate the efficacy of non-pharmaceutical interventions in 2020 and 2021.

Most important will be the rapid expansion of FDA approvals for vaccines to the pediatric population, and the approval of new vaccines tailored to Delta and other novel variants. Now that we know that mRNA vaccines can be used safely and effectively in hundreds of millions of people, the FDA should provide Emergency Use Authorization to new mRNA vaccines after phase II or even phase Ib studies of vaccines for novel SARS-CoV-2 variants whose manufacturers are already marketing Alpha variant vaccines.

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[12] P.Y. Chia et al., Virological and serological kinetics of SARS-CoV-2 Delta variant vaccine-breakthrough infections: a multi-center cohort study. medRxiv. 31 Jul 2021: https://www.medrxiv.org/content/10.1101/2021.07.28.21261295v1; accessed September 24, 2021.

[13] D. Lips, $143 Billion in Emergency K-12 Education Funding Remains Unspent. The Foundation for Research on Equal Opportunity. 2 Aug 2021: https://freopp.org/143-billion-in-emergency-k-12-education-funding-remains-unspent-bfb8bdc87a1; accessed September 24, 2021.

[14] G. Girvan, A Tale of Two Vaccine Mandates. The Dispatch. 24 Sep 2021: https://thedispatch.com/p/a-tale-of-two-vaccine-mandates; accessed September 24, 2021.

Moderna's vaccine, mRNA-1273, was designed on January 13, 2020: two days after the SARS-CoV-2 sequence had been published by a Chinese scientist, well before the West knew that the virus could be transmitted among humans.[15] mRNA sequences are effectively a form of genetic software; now that Moderna and BioNTech have proven the concept, it would make eminent sense for Operation Warp Speed to accelerate the development of vaccines for novel variants of concern.

We are incredibly lucky that an innovative public-private partnership brought us vaccines against SARS-CoV-2 far faster than we had any right to expect. Let us not squander that victory by preventing patients from receiving the next generation of coronavirus vaccines.

[15] D. Wallace-Wells, We Had the Vaccine the Whole Time. *New York*. 7 Dec 2020: https://nymag.com/intelligencer/2020/12/moderna-covid-19-vaccine-design.html; accessed September 24, 2021.