

A Pandemic Pivot Point: The Counterintuitive Dynamics of Covid-19

How over-vaccination drives the pandemic. The power of innate and recovered immunity. The early treatment solution. The unwisdom of vaccinating young people.

Bret Swanson > November 2021

Vaccines are among the great inventions of civilization. We've eradicated terrible diseases such as smallpox and polio. Just because vaccines in general are modern miracles, however, does not mean deploying *these* experimental vaccines...*en masse...during* this pandemic is the optimal strategy.¹

We've reached a pivot point in the pandemic. As federal, state, local, and global authorities coerce more and more people to take the vaccine, even rushing to approve it for children, the pandemic data and dynamics are telling us we should do exactly the opposite.

Stop vaccinating so many people. And under no circumstances vaccinate young people and children. Why must we change course? Isn't our problem under-vaccination? No. The bulk of emerging evidence suggests our problem is over-vaccination.

In important ways, mass vaccination is driving the virus and harming overall health.

How is that possible? Don't vaccines reduce the severity of disease and slow the spread? They may, at least for the first few months. But the individual and population dynamics then shift rapidly.

These Covid-19 vaccines do not prevent infection and transmission. They are, in the parlance, "leaky." Extremely leaky, it turns out.

Nations which vaccinated early and often are suffering large numbers of infection, illness, and death. Israel and the United Kingdom were the starkest early warning signs. Likewise, Singapore, with an 85% vaccination rate, is now seeing its highest spike of cases and deaths.²

The fact that the vaccines do not block infection is not just bad news for those who catch the virus.

No, a non-sterilizing vaccine changes the entire calculus of an ongoing pandemic.

The [convergence](#) on the Delta variant is likely a result of mass vaccination. Delta now accounts for close to 100% of variants in regions with significant vaccination rates. The Delta variant is more transmissible than the previous Wuhan and Alpha variants. Delta also evades the vaccines.

The first generation vaccines narrowly target the S1 portion of the SARS-CoV-2 Spike protein.³ Mass inoculation using this focused tactic trained the virus to outfox the vaccines, jeopardizing the high-risk populations who most need the vaccines to work. Expanding vaccine uptake to young people will only further drive viral evolution toward more infectious, vaccine-resistant strains. The design of the vaccines, focused on production of the dangerous Spike protein, has also resulted in a large number of injuries and deaths, which public health authorities ignore and deny.

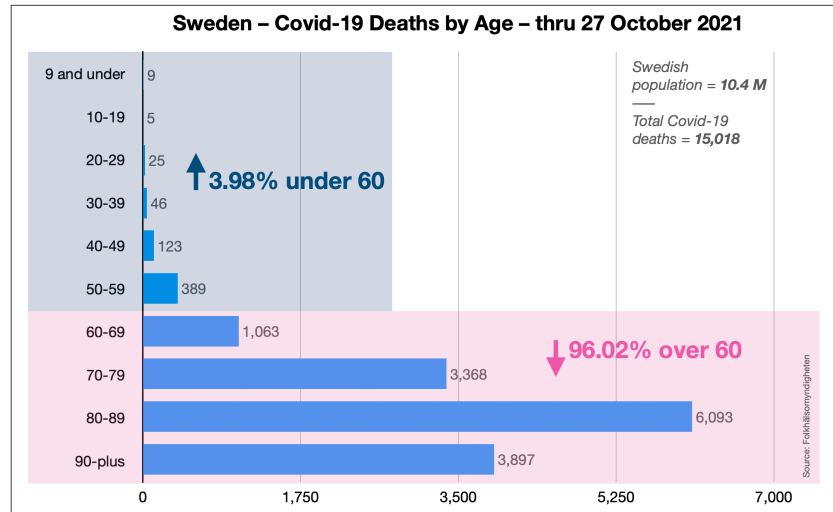
Unnecessary panic and vaccine monomania threaten social and political upheaval on an unprecedented scale. [Lockdowns](#) result in far more [harm](#) than help.⁴ The refusal of early treatment with cheap, effective, generic drugs, meanwhile, is an inexplicable stain on the medical and public health professions. Politicians have dug into positions which will only make things worse.

We desperately need a new strategy: (1) vaccinate only the highest-risk people; (2) treat infections early and aggressively (even prophylactically) with safe, inexpensive anti-virals and anti-inflammatories and with monoclonal antibody infusions; (3) promote general health with exercise, better diets, and vitamins D and C; (4) abandon lockdowns, mass closures, and other divisive social mandates which do more harm than good; (5) where necessary, deploy cheap, home-based rapid tests⁵ instead of healthy quarantines; (6) empower physi-

cians to treat individuals according to highly stratified risk factors, not blunt one-size-fits-all rules.

The Central Facts of Covid

A central fact of Covid-19 is its extreme differential effect according to age and pre-existing conditions. In general, the elderly are *one thousand to ten thousand times* (1,000-10,000x) more vulnerable to Covid-19 disease than children. Young people are simply not at risk.



Professor John P. A. Ioannidis of Stanford is one of the most cited academicians in the world. His latest estimate of Covid-19’s infection fatality rate (IFR) is ~0.15%.⁶ This overall IFR (which applies mostly to the Wuhan and Alpha strains) is just slightly worse than influenza, which is generally estimated at 0.1%. For the elderly, Covid-19 is more dangerous than the flu. For young people, Covid-19 is less risky than the flu. Depending on the health of a population, around 95% of all Covid-19 fatalities occur in those over 60 years of age.

Likewise, Covid-19 ruthlessly targets people with certain preexisting conditions, such as obesity, diabetes, kidney disease, cancer, dementia, autoimmune disorders, and [vitamin D deficiency](#).⁷ Around 95% of Covid-19 fatalities occur in people with these and other serious comorbidities.

In Sweden, which conspicuously did not impose widespread lockdowns, school closures, or mask usage, all-cause mortality barely rose in 2020, and the most active and thus exposed cohorts did not suffer extraordinary morbidity or mortality.

No sensible public policy could avoid the vastly divergent effects according to age and preexisting conditions.⁸ And yet policy in most nations has ignored these central facts. In far too many cases, governments locked down the non-elderly and healthy, and now they are forcing vaccinations upon these low-risk groups.

Another central fact of Covid-19 is *the toxicity of the Spike protein itself*.⁹ This fact was not understood at the pandemic’s outset. Nor was this fact

well characterized when the Spike-producing vaccines were conceived.

Covid-19 is a multi-stage disease. It typically begins with a respiratory viremia, similar to a cold or the flu. For most people, that’s where Covid-19 ends. But in some cases, Covid-19 moves beyond the viral stage to a cytokine storm and then hyperinflammation and hyper-coagulation. Spike attacks vascular endothelia (among other tissues) and appears to be a primary cause of these second and third phases of disease.

Early treatment is thus the key to stopping Covid-19 before it reaches the dangerous latter phases, which lead to hospitalization, where treatments are far less effective. And yet early treatment has been ignored. More often, Big Pharma slandered it and health officials suppressed it. Pfizer’s celebratory announcement on November 5 of its new anti-viral candidate, Paxlovid, undermines the campaign against ivermectin and should finally open the world’s eyes to early treatment.¹⁰

Vaccine Monomania

Vaccine monomania has deflected crucial attention from early treatment and thus led to hundreds of thousands of unnecessary hospitalizations and deaths. The Covid-19 vaccines appear to reduce the severity of disease – at least for several months. But on many other key performance and safety metrics, these vaccines fall short.

The vaccines don’t effectively block infection and transmission, especially against Delta. After five or six months, their effectiveness against disease and

death also drops off rapidly. These deficiencies could perhaps be forgiven if the vaccines were nearly perfectly safe and if they did not create dangerous evolutionary dynamics.

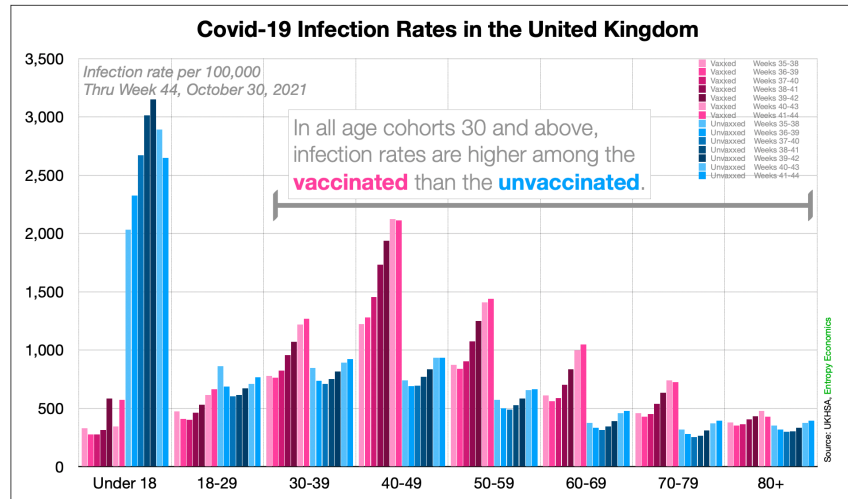
The places which vaccinated earliest and most broadly in early 2021 have now suffered major surges of infection, disease, and death around six to eight months after the initial inoculation campaigns.

Starting in July, Israel, ground zero for early and broad inoculation with the Pfizer-BioNTech vaccine, saw a new spike in cases and hospitalizations. But this was no “pandemic of the unvaccinated.” In the month of August, 61.8% of Covid-19 deaths in Israel were among those vaccinated with either two or three doses. The sudden surge so alarmed the Israelis that they quickly boosted nearly four million citizens with a third shot. Fourth shots are on the way.

The highly vaccinated United Kingdom is still in the middle of another surge. Between August 14 and November 5, 2021, 81.7% of Covid-19 fatalities in Scotland were among the fully vaccinated.¹¹

The vaccines still appear to confer some, although waning, protection against disease.¹² But the latest UK data suggest a new dynamic: in late September and through October, the vaccinated are now being infected at higher rates than the unvaccinated. According to the UK Health Security Agency’s weekly reports, for all age cohorts 30 and over, infection rates are now higher for the vaccinated. In fact, for those in their 40s, 50s, 60s, and 70s, infection rates among the vaccinated are *more than double* the unvaccinated.¹³ The two youngest cohorts were vaccinated much more recently and thus still enjoy some short-lived protection.

The failure of the vaccines to stop viral transmission is now confirmed nearly everywhere. S.V. Subramanian of Harvard looked at 68 countries and nearly 3,000 counties in the U.S. He could find no beneficial relationship between vaccination rates and infection rates.¹⁴ “In fact,” the paper noted, “the trend line suggests a marginally positive association such that countries with higher



percentage of population fully vaccinated have higher COVID-19 cases per 1 million people. Notably, Israel with over 60% of their population fully vaccinated had the highest COVID-19 cases per 1 million people in the last 7 days.”¹⁵ Subramanian concluded that “The sole reliance on vaccination as a primary strategy to mitigate COVID-19 and its adverse consequences needs to be re-examined, especially considering the Delta (B.1.617.2) variant and the likelihood of future variants.”

A growing literature examining the micro-biology of viral replication confirms the macro-biological observations. These new studies show that viral loads among infected people who are vaccinated are just as high as the unvaccinated – and possibly

Israel

Covid-19 fatalities, month of August 2021

Unvaccinated	218	35.9%	
1 dose	14	2.3%	
1 + 2	313	51.6%	(fully vaccinated)
1 + 2 + 3	62	10.2%	(booster)
Some vaccination	389	64.1%	

Source: Israel Ministry of Health

Scotland

Covid-19 fatalities, 14 August - 22 October 2021

Unvaccinated	161	15.8%	
1 dose	34	3.3%	
1 + 2	827	80.9%	(fully vaccinated)
Some vaccination	861	84.2%	

Source: Public Health Scotland

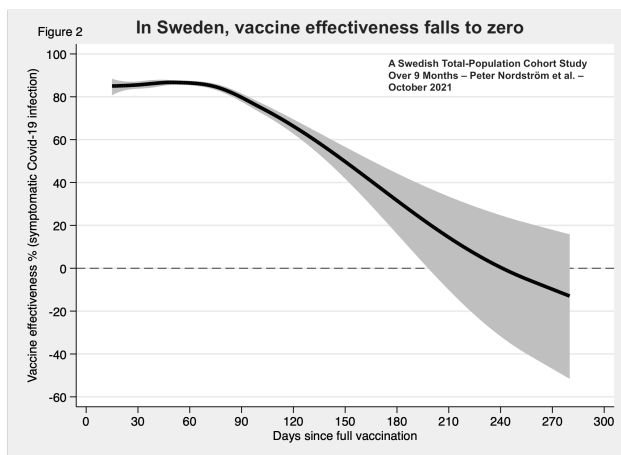
higher.¹⁶ This total failure of the vaccines to sterilize against infection and transmission is yet another central fact of Covid-19.¹⁷

Throughout the summer of 2021, public officials in the U.S. insisted the only reason the pandemic persisted was the failure of some Americans to take the vaccine. Public health officials in many states reported that “95%” or “99%” of hospitalizations were among the unvaccinated. We now know these data and statements were untrue.

In fact, by mid-summer the majority of Americans hospitalized with Covid-19 were vaccinated. A leaked [study](#) conducted by Humetrix and the Department of Defense surveyed 5.6 million Medicare patients, most of whom are 65 or older.¹⁸ The study, which looked at a massive sample of the American population, showed that, as of August 7, 2021, **60% of hospitalized Covid-19 patients over 65 were fully vaccinated.**

New studies examining periods earlier in the spring and summer confirm that even then substantial portions of hospitalizations were among the vaccinated. A [study](#) of 67,000 in the Covid-Net surveillance network found that by June 2021, 16.1% of all hospitalizations were among the vaccinated.¹⁹ For those age 65 and over, 32% of the June hospitalizations were vaccinated. A [study](#) of 15,196 Veterans Affairs patients hospitalized for Covid-19 in the late winter and spring of 2021 – the period of maximal vaccine efficacy – found 23.9% had been vaccinated.²⁰

A new Swedish [pre-print](#) in the Lancet looked at 1.68 million people, half vaccinated, half not.²¹ It confirmed the sharp fall-off in vaccine effectiveness. The Pfizer vaccine’s potency against infection fell to just 47% after 121-180 days, and by 211



days after vaccination, “no effectiveness could be detected.” The Moderna vaccine’s ability to deter infection lasted a bit longer. Together, the vaccines’ ability to fight severe disease fell to just 42% after 181 days. (This is well below the FDA’s longstanding minimum standard for vaccines which insists on at least 50% efficacy for at least one year.) Effectiveness was worst among men, the elderly, and the comorbid – those who most need protection.

This pattern is now seen everywhere. Waterford, Ireland, for example, has vaccinated 99.7% of its adults, the highest proportion in Ireland. Waterford [now has](#) Ireland’s highest rate of Covid-19 infections.²² Gibraltar, 100% vaccinated and 40% boosted, is reportedly canceling Christmas.²³

Evolutionary Pressure and Escape Mutants

The failure of vaccines to stop infection and spread doesn’t just jeopardize vulnerable individuals. And it doesn’t merely make vaccine mandates, passports, and other forms of coercion completely obsolete and nonsensical. No, this fact leads to far larger and more complex population-wide problems, which could alter biological history.

Universal inoculation with non-sterilizing, narrowly-targeted vaccines during a widespread outbreak, without regard for highly differentiated risk factors and immune health, can create explosive evolutionary dynamics.

Viruses always produce mutations. With the replication of trillions and trillions of viral particles, billions of mutations will arise. Nearly all of them will go nowhere. A few mutations which happen to be more infectious will survive and even thrive. After all, the “goal” of a virus is to replicate.

In a large, diverse, complex system, such as a population, many variants will often circulate. For the first 11 or so months after the emergence of SARS-CoV-2, we detected a number of variants. But they were a small proportion of overall infections. None gained traction in the population.²⁴

Then in December 2020 and January 2021 we began vaccinating large numbers of people. Soon after, we began to see the corresponding growth of more infectious strains, known as “variants of concern” (Alpha, Beta, Gamma, etc.).²⁵ By the summer of 2021, in places with broad vaccination, the Delta variant had almost completely taken over.

The vaccines were designed to produce, and elicit an antibody response to, the S1 Spike protein of the original Wuhan strain. The vaccinal antibodies recognize this Wuhan Spike and, at least for a short time, block replication of the original strain. The Delta variant, however, enjoyed several Spike mutations which made it more infectious and which partially evaded the highly targeted S1-specific antibodies elicited by the vaccines.

In fact, for people whose innate immune systems may have handled the Wuhan strain rather easily, the vaccines replaced their broad virus-fighting capabilities with far narrower specific antibodies – targeting a strain which today no longer exists. Delta could now easily outcompete the Wuhan strain.

As you can see in the diagram below, vaccinated hosts exert evolutionary pressure, steering viral predominance toward vaccine escapees.²⁶ The more vaccinees, the more directed evolutionary pressure, the faster the growth of more infectious strains.

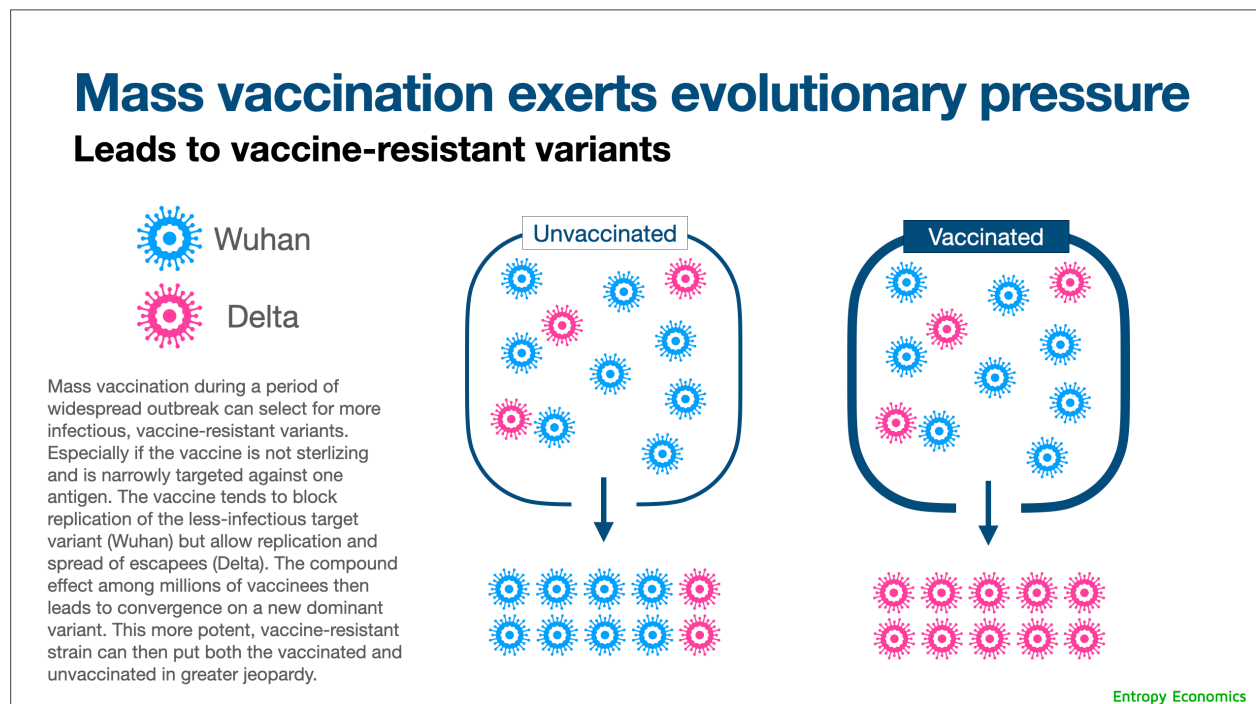
According to vaccinologist Geert Vanden Bossche, “Mass vaccination turns vaccinees into an excellent breeding ground for naturally selected S-directed immune escape variants.”²⁷ As vaccine effectiveness waned over several months, millions of vaccinees were infected with Delta and spread it further. The highly infectious and vaccine-avoiding

Delta both *exploited* and *exacerbated* the vaccines’ short durability.

In effect, the vaccines successfully killed off the Wuhan and other early strains – at the expense of promoting convergence onto a new, dominant, more infectious Delta variant. Delta now accounts for nearly 100% of infections in most places around the world, except South America, where it is growing.

Trevor Bedford of the Fred Hutchinson Cancer Research Center calls the rate of SARS-CoV-2 evolution centered on the S1 Spike domain “[remarkable](#).” For comparison, Bedford flags the example of the quickly-evolving HA1 domain of H3N2 influenza. The S1 domain of SARS-CoV-2 is changing *five times as fast*.

The more infectious, vaccine-evading Delta puts vulnerable people – both vaccinated and not – at greater risk. In other words, mass vaccination during a pandemic with these vaccines may produce not the intended positive externalities but *negative externalities*. The vaccines didn’t slow the spread – they amplified it. The Delta wave was not an exogenous shock but an endogenous result of our vaccine policy. If we had focused vaccination on high-risk individuals, we would not have exerted as much evolutionary pressure on the virus. We would see a broader diversity of strains, many of them less infectious and less vaccine-resistant than



Delta. Vulnerable people would thus possibly be at less risk than they are today.

In fact, the population as a whole may have been better off. Instead, with greater infectious pressure across society, the marginal person is more likely to become infected, and with a higher viral load. Where a middle-aged or even young person may have avoided or brushed off the Whuan strain, they may contract Delta, and then pass it along. These are probabilistic risks across large populations and must be weighed against the benefits and risks of the vaccines.

The potential of immune escape is not unknown among epidemiologists and immunologists. In 2015, scientists were already studying the possibility that “Imperfect Vaccination Can Enhance the Transmission of Highly Virulent Pathogens.”²⁸ In 2018, Quanta Magazine [explained](#) “How Vaccines Can Drive Pathogens to Evolve.” For the last year scientists all over the world have quietly been exploring the dynamics – and possible dangers – of vaccine-driven rapid evolution of SARS-CoV-2.²⁹

The Unwisdom of Vaccinating Children

Vaccination rates of between 60% and 95% of adults in many Western nations have already led to convergence on a more infectious strain. The new push to vaccinate tens of millions of young people and children now threatens to shift viral evolution to an even higher gear.

Geert Vanden Bossche emphatically objects to the widespread vaccination of young people against Covid-19: *“There is barely any more catastrophic immune intervention one could think of.”*

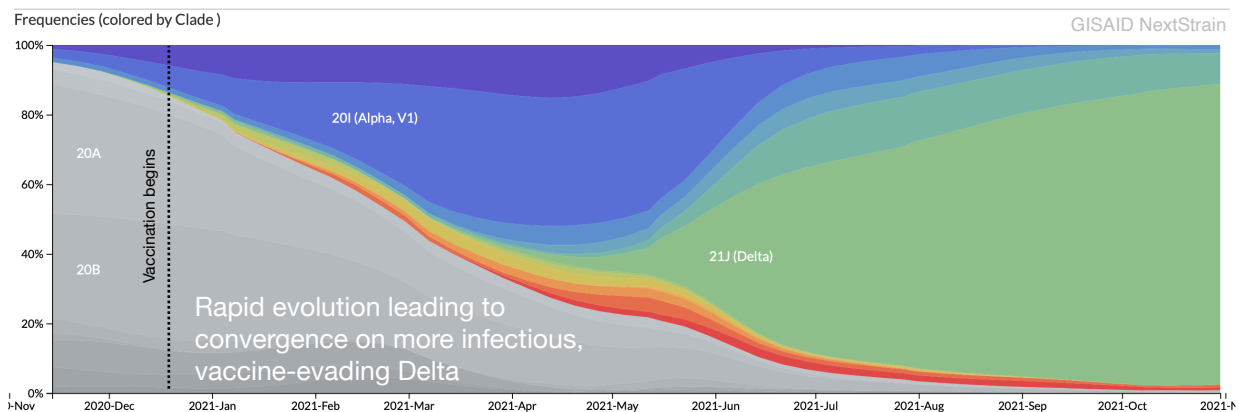
In general, young people enjoy robust innate immunity.³⁰ They are good at killing off a wide range of pathogens. In the case of Covid-19, they are especially successful.³¹ In the process, their immune systems learn. They are educated.

“Vaccination of children and youngsters,” however, Vanden Bossche warns, “is turning off their broadly protective innate immunity in exchange for S-specific vaccinal Abs.” These narrowly targeted antibodies “are becoming increasingly useless since their neutralizing capacity becomes more and more eroded as a result of enhanced escape of SARS-CoV-2 from neutralizing Abs.”

The first encounter with an antigen prejudices the immune system. If that first exposure is suboptimal, then later responses to future exposures will be suboptimal. This phenomenon is known as “original antigenic sin.”³² For non-elderly healthy people, the narrow Spike-induced antibodies of the vaccines usurp the broad and agile capabilities of the innate immune system and can even disrupt the adaptive immune system.

Here’s another central fact of Covid-19: **Recovered immunity is vastly superior to the vaccines.**³³ It’s not a close call. Despite the CDC’s recent [attempt](#)³⁴ to argue the opposite, we now have 128 studies showing definitively that recovered immunity is far more durable and more potent.³⁵ Recovered immunity is broad and (at least for now) not variant-specific. This is good for everyone in non-high-risk groups, especially for children.³⁶

Vaccinating young people in this case replaces broad, variant-nonspecific, sterilizing immunity with narrow, variant-specific, non-sterilizing antibodies. The vaccines could even harm young people’s ability to fight off a range of other coron-



aviruses. Through unnecessary vaccination, we are *miseducating* their immune systems.

Young people with robust innate immunity act as a viral sink. They dampen infectious pressure and thus help lead toward herd immunity. Danish scientist Christine S. Benn briefly summarized the case against child Covid-19 inoculation in a letter to the *British Medical Journal*.³⁷ Not only do individual safety risks of vaccination outstrip the negligible risks of infection, but vaccinating large new cohorts may also increase infectious pressure with strains even more potent than Delta.³⁸

A new article in *Cellular Molecular Immunology* concludes, “The spike protein of SARS-CoV-2 variant A.30 is heavily mutated and evades vaccine-induced antibodies with high efficiency.”³⁹ Some scientists say “Delta-plus” is already upon us.

“Safe and Effective”

Evolutionary dynamics and vaccine effectiveness are two major factors in any cost-benefit equation, informing a larger public health strategy. Vaccine safety is a third. But prohibitions on discussion of safety have been just as severe as censorship of early treatment options.

For the last 11 months, hundreds of thousands of people claiming harm from the vaccines have attempted to tell their stories. When Facebook erased their forums, they scurried to other outlets to commiserate and petition their governments. Now, a few brave physicians, public health leaders, and countries are finally speaking up.

In the first week of October, Sweden and Finland stopped usage of Moderna for anyone under 30 years of age. Denmark stopped Moderna for those under 18. Iceland went even further. On October 8, it banned use of Moderna for everyone. The reason is elevated rates of myocarditis (heart inflammation) among vaccinees, especially young men. Myocarditis, however, is just the tip of the vaccine-injury iceberg.

Patricia Lee is an ICU surgeon in California. On September 28, she wrote to the FDA and CDC: “I have been a doctor for more than twenty years and I have never witnessed so many vaccine-related injuries until this year. As a fully vaccinated physician, I feel pained in admitting this. But I am compelled by conscience to state the facts as I observe them on the frontlines.”⁴⁰

Lee detailed at least six types of catastrophic vaccine reactions. One patient under 40 developed transverse myelitis and “became quadriplegic and blind.” Another healthy early-70s patient developed a rare non-Covid pneumocystis pneumonia and then multi-system organ failure. “Two women in their early fifties presented to the hospital after developing acute abdominal catastrophes.” An early-60s male with “zero risk factors” suffered a cerebral venous sinus thrombosis (CVST), a rare type of stroke.

By the way, a study by the Mayo Clinic found a 5.1-fold increase in CVST stroke after receiving the J&J vaccine compared to the background rate.⁴¹

Lee is seeing a wave of obstetric complications. “In the last two months alone, I have cared for at least four such patients, two with post-partum hemorrhagic shock and two with septic shock secondary to chorioamnionitis following pre-term labor.” Lee says half of the patients mentioned in her letter died.

Are these tragic stories exceedingly rare? Lee obviously thinks they are far too common. So do a growing number of physicians and nurses.⁴² But why don’t we know with specificity? Why is it such a mystery?

Estimating Adverse Events

Quantification is difficult. Several sophisticated analysts, however, now estimate Americans have suffered many tens of thousands of vaccine-caused deaths and hundreds of thousands of serious vaccine injuries.

In the U.S., surveillance of vaccine reactions is chiefly the job of VAERS – the vaccine adverse event reporting system, jointly run by FDA and CDC.⁴³ Its purpose is to detect potentially worrisome signals, prompting further investigation.

As of November 5, 2021, VAERS reports 8,456 suspected deaths from Covid-19 vaccines in the U.S. That’s more death reports than in the cumulative 30-year history of VAERS for all vaccines.⁴⁴ Among a total of 643,956 Covid-19 vaccine adverse event reports in 2021, we find 4,263 heart attacks, 3,805 cases of myo/pericarditis, 6,550 cases of shingles, 39,629 hospitalizations, and 9,770 permanent disabilities.⁴⁵ For comparison, as of October 30, EudraVigilance, the analogous European Medicines Agency system, reports 2.7 mil-

lion adverse events and 29,106 suspected Covid-19 vaccine deaths.

These reports are just the beginning. VAERS is an underutilized system, which is effectively voluntary. Health care workers are supposed to report all events. But even in normal times the vast majority go unreported. Studies suggest for every one event reported to VAERS, there are an additional 10 to 100 real events, depending on the severity of the reaction. This is the underreporting factor, or the URF. One Harvard-Pilgrim study found that “Adverse events from vaccines are common but underreported, with less than one percent reported to the Food and Drug Administration (FDA). Low reporting rates preclude or delay the identification of ‘problem’ vaccines, potentially endangering the health of the public.”⁴⁶ This would imply an URF of 100 or more. We doubt the real URF for serious events is that high.

There is no precise URF. It is not a number that can ever be nailed down exactly. It is instead a heuristic, which can help paint a roughly accurate picture of total actual events. A Mass General study published by JAMA showed that anaphylaxis following Covid-19 vaccination occurred at a rate of 2.47 per 10,000.⁴⁷ That’s 50 to 120 times the rate implied by VAERS or claimed by the CDC.

One scientist who has examined the VAERS data in meticulous detail is biostatistician Jessica Rose.⁴⁸ She estimates an URF for Covid-19 of 31, meaning there could be around 30 real world adverse events for every event reported in VAERS.

That would imply Americans have, due to vaccination, suffered 132,000 heart attacks, 118,000 cases of myo/pericarditis, 203,000 cases of shingles, 85,000 cases of Bell’s Palsy, and 42,000 miscarriages (among endless other types of injury). Despite the FDA’s assurances to pregnant (and potentially pregnant) women, a reanalysis of the supporting study suggests vaccines may in fact dramatically boost the risk of miscarriage.⁴⁹

Myocarditis is a conspicuous adverse event because young people rarely suffer heart disease. But its prevalence suggests many of the other injuries also need deeper research.

In a paper for Current Problems in Cardiology, Rose and cardiologist Peter McCullough analyzed the VAERS reports of myocarditis: “Within 8 weeks of the public offering of COVID-19 products to the

12-15-year-old age group, we found **19 times the expected number of myocarditis cases** in the vaccination volunteers over background myocarditis rates for this age group. In addition, a 5-fold increase in myocarditis rate was observed subsequent to dose 2 as opposed to dose 1 in 15-year-old males.”⁵⁰ These are just the VAERS reports; there could be 30 times as many cases.

Myocarditis is almost never a “mild” condition. Some 86% of vaccine-related myocarditis cases were hospitalized.⁵¹ A substantial number of cases go on to suffer heart failure within five to 10 years. A team of scientists in the UK offers a hypothesis for the pathophysiology of myocarditis which could also apply to other organs: “circulating S[pike] protein prompts vascular PC [pericyte] dysfunction, potentially contributing to establishing microvascular injury in organs distant from the site of infection.”⁵² Taiwan now prohibits use of the Pfizer vaccine for males 12-17, it suspended the second shot for all teenagers, and Germany and France discourage use of Moderna for those under 30.

The large Swedish “total population study” referenced earlier may provide a clue. Although not the focus of the paper, the authors report that 3,939 people died within 14 days of the second vaccine dose and were thus excluded from the study.⁵³ Well, how does that figure compare to the expected number of deaths in a 14-day period?

Looking at 14-day periods in the spring and summer of 2015-19, we find an average of 3,279 deaths. In the especially deadly year of 2020, Sweden’s average 14-day death total during this period was 3,761. The 3,939 deaths within 14 days of vaccination are more than last year’s 14-day average and **20% higher than the recent five-year average**. (Swedish vaccination ramped up in April-July. It’s important to note that except for January, before Sweden had done much vaccination, excess deaths so far in 2021 have been normal or even below normal.)⁵⁴

There’s another factor. The excluded 3,939 were among 4,034,787 vaccinees measured in the study. Sweden’s population is 10.4 million. The vaccinees are disproportionately elderly, so one might expect a higher death rate compared to the unvaccinated, who are disproportionately young. And yet this extraordinarily high death count of 3,939 came from a sample of just 39% of the population,

whereas the five-year average of 3,279 is among 100% of the population.⁵⁵

We are finding similar signals in the U.S. In October, a lawyer obtained CMS Medicare data from nine states. It showed that in the first half of 2021, 37,599 people 65-and-over in nine states died within 28 days of vaccination.⁵⁶ We compared the CMS data with VAERS reports of death within 28 days of vaccination. After accounting for 65-and-over population, we found a state-by-state R^2 correlation of 0.4999.⁵⁷ The CMS deaths in the nine states were clustered around a VAERS factor of about 40. That is, there were about 40 CMS deaths for each VAERS reported death. Some of these deaths within 28 days would have occurred no matter what. They are background deaths. The CMS-VAERS comparison thus lends some credence to Rose's estimated URF of 31.

But for illustrative purposes, let's say the URF is not 31 but 20. If one of every two deaths (20/40) in this CMS sample were in fact vaccine-related, then the number of 65-and-over Americans in the nine states who died from vaccine injuries within 28 days in the first half of the year would be 18,800. The nine states represent 40.7% of the nation's 65+ population. Extrapolating for all 50 states gives an estimate of 65-and-over vaccine deaths within 28 days of 46,192. By the way, the raw CMS data for the whole country show deaths within 14 days of vaccination of 47,465. Because the official reporting is so poor, we are forced to engage in this order-of-magnitude guesswork.

If one hasn't studied the topic deeply, such numbers may seem implausible. The supporting evidence, however, keeps piling up.

German pathologist Peter Schirmacher, a professor at the University of Heidelberg, performed autopsies on 40 people who died soon after vaccination.⁵⁸ He concluded that *at least* 30-40% of the deaths were caused by the vaccines. Last winter Norway performed autopsies on the first 100 elderly people to die soon after vaccination and found that 10 were vaccine injuries and another 26 were possible.⁵⁹

Now we are seeing unusually high numbers of young athletes collapsing on fields and courts, suffering cardiac events and far too many deaths.⁶⁰ One review found a five-fold increase in the number of FIFA soccer players who collapsed and/or died in 2021, compared to the 20-year av-

erage.⁶¹ Anecdotes are not data, and data are not RCTs, but patterns should be investigated.

Public health officials casually wave away these concerns. VAERS is unreliable, they say. Everyone agrees it's highly imperfect. But if it is totally useless, as officials now assert, then why has our government, which is spending unlimited billions on Covid, not replaced it with a better surveillance network? Does America not need a functional pharmacovigilance program? How can we conduct the largest medical experiment in world history and studiously avoid collecting reliable data?

There is growing evidence that the vaccines may depress and contort the broader immune system.⁶² And that the vaccines can exacerbate conditions like diabetes. Physicians are reporting significant numbers of non-Covid pneumonias and serious respiratory infections around 5-6 months after vaccination.⁶³ On October 26, NPR wondered why "ERs are now swamped with seriously ill patients – but many don't even have COVID."⁶⁴

The premier of Western Australia, which has only seen around 1,200 Covid cases in 22 months, is baffled: "Our hospitals are under enormous pressure. It's the same in Tasmania, South Australia, New South Wales, Queensland, and Victoria. Enormous pressure. Why it is, is hard to know."⁶⁵ Even the CDC's own report, which attempted to show vaccine immunity is better than recovered immunity, unintentionally revealed some bad news: the vaccinated had lots more respiratory infections *of any type* than the unvaccinated. Depressed immune systems raise the prospect that other diseases, such as cancer, may emerge in higher numbers.

Excess Death in U.S. and Europe

All-cause mortality is a crucial test of whether a public health strategy is working.⁶⁶ On this score, the U.S. and much of Europe look to be failing.

In the most recent three months, total U.S. excess deaths are up 69% compared to 2020.⁶⁷ Looking at weeks 31-43 removes the effect of last winter's Covid surge. Middle-aged Americans show the sharpest upsurge. EuroMomo [data](#) show similar patterns across 29 European nations.⁶⁸ (Although conspicuously not in Sweden.)⁶⁹ Excess mortality of 15-44 year olds is around double last year's. For 45-65, excess deaths are up 40-50% from the already bad 2020. These are mostly highly vaccinat-

ed populations.⁷⁰ Both Covid and non-Covid deaths, however, are way up.

Cleverly shuffled statistics can show that the vaccines remain somewhat effective against severe Covid-19, even after they have substantially waned. Yet how do medical authorities explain the substantial increases in both Covid and non-Covid deaths this year? Perhaps we shouldn't be surprised. After all, not even Pfizer's original "gold standard" trial showed an overall benefit.

In the Pfizer six-month trial, the official study used to justify the FDA's authorization and approval of BNT/Comirnaty, two (2) people who received the placebo died from Covid-19, while one (1) person who received the vaccine died from Covid-19. Some might say that's a risk reduction of 50%. Even those without training in biostatistics, however, may reasonably ask whether, in a study of 45,000 people, two deaths vs. one death is statistically significant.

All-cause mortality remains the ultimate test. In the Pfizer trial, a total of 17 people who received the placebo died. And yet 21 people who received the vaccine died.⁷¹ Unfortunately, this perhaps statistically ambiguous trial result is a microcosm of what we see happening in the real world. The vaccines are reducing the severity of Covid-19 disease for some – but possibly at the monumental expense of worse health overall.

The elevated fatality rates this late in 2021 are surprising to many. Large numbers of our most frail died in the first waves of Covid-19 in 2020 and early 2021 (that is, many deaths were sadly pulled forward). Hundreds of millions are now

vaccinated and/or recovered. Tragically, we also lost 21,000 more Americans to drug overdoses in 2020 compared to 2019, a 30% rise. Distress-causing lockdowns are now less severe. One might expect, given these factors, that 2021 would revert to a more normal baseline. Yet both Covid deaths and non-Covid deaths are far higher in 2021 – overall and in recent months.⁷²

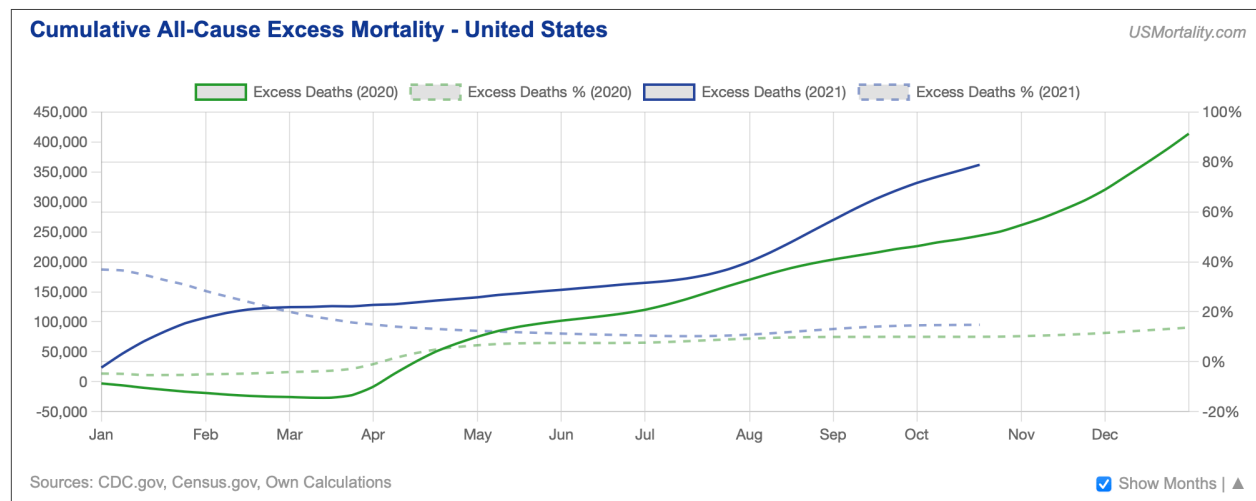
Our Booster Future?

If the first two rounds of vaccination aren't working, can we boost our way out of this mess?

Two of the FDA's most senior vaccine scientists didn't think so. On August 31, they resigned, reportedly because they objected to White House pressure to approve vaccine booster shots. The following week, those two scientists – Marion Gruber and Philip Krause – co-authored a [Lancet article](#) warning against boosters at this time.⁷³ In their Lancet letter, they echoed many of the same concerns which censored physicians and scientists cite when pumping the brakes on coerced universal vaccination.

Boosters may be appropriate for some high-risk people. But many questions remain: How much Spike protein can our bodies take?⁷⁴ More is not always better – do we develop "high zone tolerance"?⁷⁵ And will boosters further amplify and direct evolutionary pressure toward more dangerous variants?

On September 17, the FDA's [VRBPAC vaccine advisory committee](#), by a vote of 16-2, agreed with Gruber and Krause and rejected boosters for those under 65. The boosters were of course later ap-



proved by the FDA and CDC chiefs over the committee’s objections. The first results of the booster experiment will yet again come from Israel, which mass-boostered this summer and fall.

The Early Treatment Scandal

In April of 2021, India suffered its first dramatic spike of Covid cases and deaths. The world press panicked over the pandemic’s new epicenter. And then, just as quickly, the Indian emergency ended. Especially in the nation’s largest state, Uttar Pradesh, population 240 million.⁷⁶ It didn’t just fade away. Covid dropped like a rock and has yet to be seen again. How was this possible?

The probable answer points to one of the greatest scandals of the pandemic. Where many of the world’s public health authorities abandoned their mission to find and promote early treatments, opting instead for passive “supportive care” in hospitals, Uttar Pradesh aggressively deployed the unmentionable [ivermectin](#). Within weeks, cases and deaths dropped to near-zero. Where they have remained for the last six months. (See charts.)

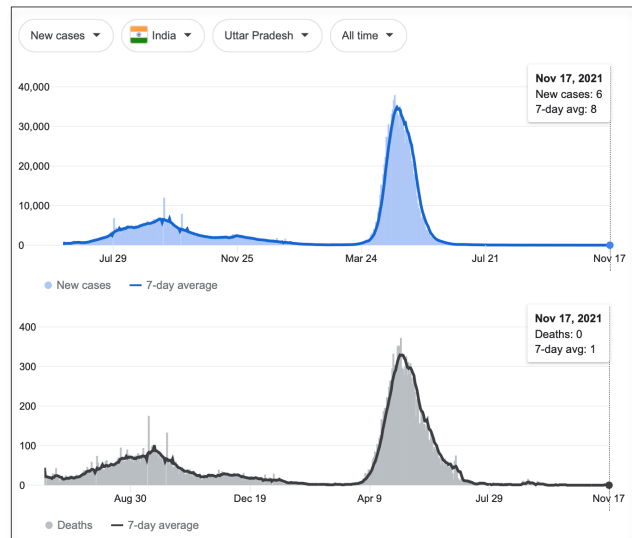
Temporal correlation does not necessarily imply causation. Such a massive case study with apparently dramatic results, however, calls for intense investigation.

The [meta-analysis](#) of ivermectin shows nearly definitive effectiveness.⁷⁷ Across 65 studies, early ivermectin usage shows a benefit of 67%. Used prophylactically, it shows an 86% benefit. No matter how you slice and dice the data – randomized control trials, peer-reviewed, early treatment, late, excluding questionable studies – the result is the same: ivermectin works.⁷⁸

In one of the most recent studies, gastroenterologist [Thomas J. Borody](#) of Australia compared 600 Covid-19 patients who received ivermectin against 600 who did not. In the non-ivermectin control group, 70 were hospitalized, and six died. Among those who received ivermectin, five were hospitalized, and zero died.⁷⁹

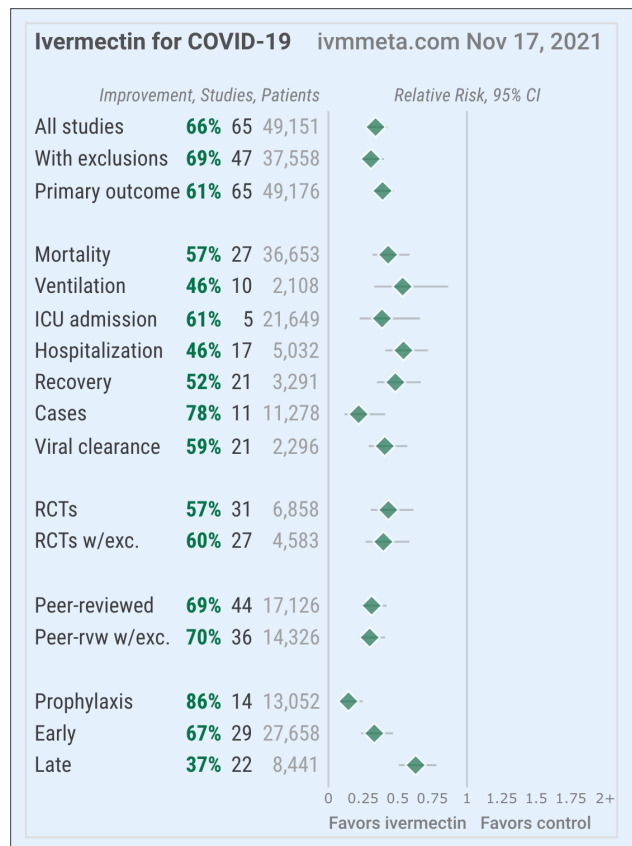
Ivermectin is not perfect. No treatment is. It’s far more effective when taken early, rather than late. But it is extraordinarily safe. About as safe as a medicine can be. With lots of evidence that it helps – both in trials and observations from front-line doctors – and with almost no downside, sane policy would favor widespread distribution. Fur-

Uttar Pradesh, India, population 240 million



thermore, it’s just one of several generic therapeutics which appear to dramatically improve outcomes.⁸⁰

Fluvaxamine and nitazoxanide appear to be highly effective, and, yes, even [hydroxychloroquine \(HCO\)](#) seems somewhat effective.⁸¹ Many physicians say these agents are most potent when used



in combination – cocktails using some mix of ivermectin, nitazoxanide, fluvoxamine, hydroxy-chloroquine, and vitamins D and C, etc.

Fluvoxamine, an SSRI, just performed well in another clinical trial, with a Lancet study showing a 66% reduction in Covid-19 hospitalization or ER visit and a 91% reduction in death.⁸²

The organized campaigns against ivermectin (and other early treatments) by the FDA, CDC, pharmaceutical companies, health societies, hospital systems, public officials, the media, and far too many physicians themselves is inexplicable from a medical perspective. The NIH itself lists two of these “villains” as treatments. (The NIH lists [just three](#) “Antiviral Agents That Are Approved or Under Evaluation for the Treatment of COVID-19.” One is remdesivir, the expensive hospital-administered drug which does not help against Covid-19 but which does cause significant liver and kidney damage.⁸³ The other two NIH-listed anti-viral agents are ivermectin and nitazoxanide.)

Hospital systems and pharmacy chains across the country have clamped down on a range of safe, FDA-approved drugs, which have been prescribed millions of times both on- and off-label for decades. They have not only denied treatment to outpatients but also to deathly ill hospital patients.

On November 9, Dr. Paul Marik, who is director of the ICU at Sentara Norfolk General Hospital in Virginia, sued his hospital system.⁸⁴ After months of wrangling, Sentara Health System barred all its hospitals and doctors from helping patients with ivermectin, fluvoxamine, and several other drugs Dr. Marik had been using to great effect. They *even forbade vitamin C* to treat Covid.⁸⁵ Joseph Varon, chief of staff at two major Houston hospitals, attests to the efficacy of Marik’s MATH+ protocol.⁸⁶ Dr. Varon contends the protocol yields a 7% hospital fatality rate versus an average ~21% rate worldwide.

(Monoclonal antibody treatments, such as Regeneron, have also proved highly effective. The assault against them has not been as severe and comprehensive as the generic treatments. Yet public health officials did not promote them as they should have. In the summer of 2021, as Florida and other states ramped up monoclonal infusion clinics, the federal government interceded and began hoarding and redistributing monoclonals according to politics, not supply and demand.)

The failure to deploy these cheap and highly effective agents broadly and aggressively may have cost the lives of many tens of thousands in the U.S. alone. This failure also made all the catastrophic lockdown policies appear more necessary than they were. Same for the apparent need to vaccinate low-risk people with a potentially risky experimental product. If early treatment were aggressively deployed instead of suppressed, the entire economic, social, and political history of the last 22 months would be unrecognizably different.

According to the early data, Pfizer’s new drug candidate, Paxlovid, looks promising. We hope it’s a knockout. If it is, it will largely imitate the salutary effects of ivermectin, nitazoxanide, and fluvoxamine – at a higher monetary cost. And after nearly two years of denying patients the early treatments already at our fingertips.

Costs and Benefits, Risks and Rewards

No complex system can be fully captured in a simple cost-benefit ratio. Certainly not one with as many heterogeneous parts and dynamics as a pandemic. We can, however, distill our analysis into some rough rules of risk and reward.

Young people are not at significant risk of Covid-19. Healthy people up to the age of 60 or 70 also handle the disease quite well. The elderly and comorbid are at major risk of Covid-19.⁸⁷

It makes sense, therefore, to focus protection on the vulnerable. Lockdowns do not slow the spread, but they do massive economic and social damage, so we should encourage the bulk of people to live and work normal, healthy lives.

Infection Fatality Rate

Age	IFR
0-19	0.0027%
20-29	0.014%
30-39	0.031%
40-49	0.082%
50-59	0.27%
60-69	0.59%
70+ non-homes	2.4%
70+	5.5%

Source: Axfors, Ioannidis

The first generation vaccines may yield a net benefit for some high-risk people. Vaccination can shift infection and transmission into the future by a few months, at most. The same goes for disease reduction.

If the vaccines don’t prevent infection or transmission, however, we cannot insist that everyone take them for **public** health reasons – to stop the spread. If the vaccines are sometimes harmful,

	Individual		Population	
	Risk	Benefit	Risk	Benefit
Vaccination Pfizer-BioNTech, Moderna, J&J, AZ	Adverse events: cardiac, neurologic, immunologic, hematologic, reproductive reactions. Potentially depresses immune health. Original antigenic sin. Additional unknown risks. Death. May increase infection likelihood in first two weeks and then again after 5-6 months. Requires boosters, which amplify the risks above.	Reduces severity of disease for 2-6 months. May reduce infection likelihood for 2-6 months. Because young, healthy people and the recovered do not suffer much disease, they do not enjoy these benefits to the same degree.	May increase infection and transmission likelihood in first two weeks and then again after 5-6 months. Exerts evolutionary pressure, driving convergence on more infectious and potentially more dangerous variants. May drive convergence on vaccine-resistant strains, reducing effectiveness of vaccines for the most vulnerable.	May reduce infection and transmission likelihood (slow the spread) for 2-6 months. Because children and the recovered do not suffer infection nor transmit at naive adult rates, they do not enjoy these benefits to the same degree.
Early treatment ivermectin, nitazoxanide, fluvoxamine, vitamin D, etc.	Almost none.	Reduces severity of disease. Reduces infection likelihood, used prophylactically.	Almost none.	Reduces infection and transmission likelihood, used prophylactically. Shortens course of infection, thus reducing transmission.

failing a risk-reward calculation for many people, then we should not encourage everyone to take them for *individual* health reasons. Dr. Jay Battacharya of Stanford says it may be unwise for those under 30 years old to take vaccine. One scientist presenting at the September VRBPAC meeting, Dr. Doran Fink of FDA, said the myocarditis risk alone may exceed any vaccine reward for males under 40. Additional individual and population risks may push this age higher.

If mass vaccination generates extreme evolutionary pressure, selecting for dangerous variants which escape vaccine protection and even natural immunity, then the window for vaccination narrows further. Given the near total invulnerability of healthy young people (and the recovered) to serious Covid-19 disease, nearly any individual safety risk or societal risk due to vaccination is too much for these cohorts.

The availability of highly effective and inexpensive generic drugs to counteract Covid-19 further reduces the need to rely on potentially dangerous mass vaccination. Cocktails of anti-viral and anti-inflammatory therapeutics, along side monoclonal antibodies, can prevent the vast majority of bad outcomes when taken early and can even help reduce the severity of disease later on. Applying these agents prophylactically could also help slow the spread, as demonstrated in test-and-treat programs worldwide. Early treatment shifts the risk-benefit equation away from vaccination for most.

We have a shrinking number of chances to avoid the worst-case biological and political outcomes. Shifting away from vaccine monomania and toward a more balanced, targeted, early-treatment approach can improve individual health and population-level dynamics.

On December 1, Matthew Memoli is scheduled to argue against vaccine mandates at NIH's Grand Rounds.⁸⁸ Dr. Memoli is an award-winning vaccinologist who has worked at NIH for 16 years. He argues "with existing vaccines, blanket vaccination of people at low risk of severe illness could hamper the development of more-robust immunity gained across a population from infection." This may be the pivot toward a new beginning. **EE**

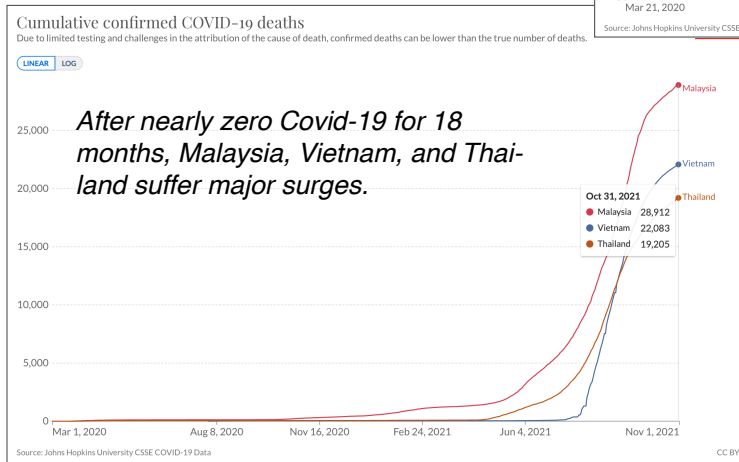
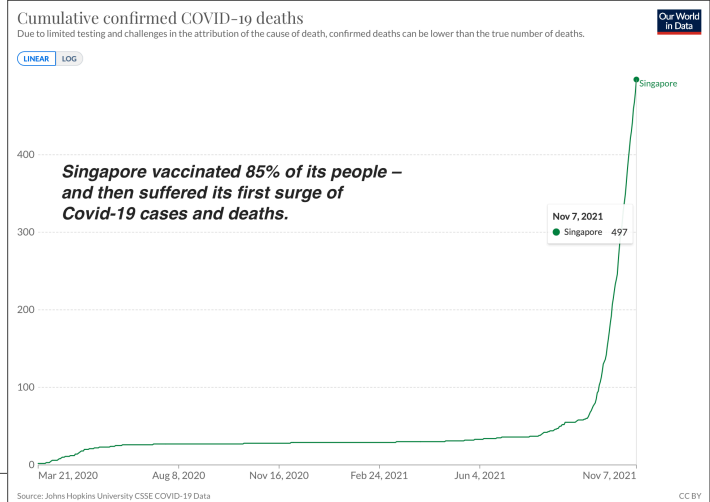
This note is for informational purposes only. It is not a recommendation to buy or sell securities and is not personalized investment advice. It is not medical advice. Each person should make personal health decisions in consultation with their physician. We strive to offer our best analysis, based on information we believe to be reliable, but we make no warranty as to accuracy.

We are not biologists or physicians. But we do analyze complex, multi-dimensional systems. We've attempted to digest the literature and the data and make some sense of a dynamic landscape. We don't pretend to usurp the the scientists or doctors who are far more expert and who will surely chuckle at our inevitable mistakes. Sometimes, however, an outsider's perspective can be useful.

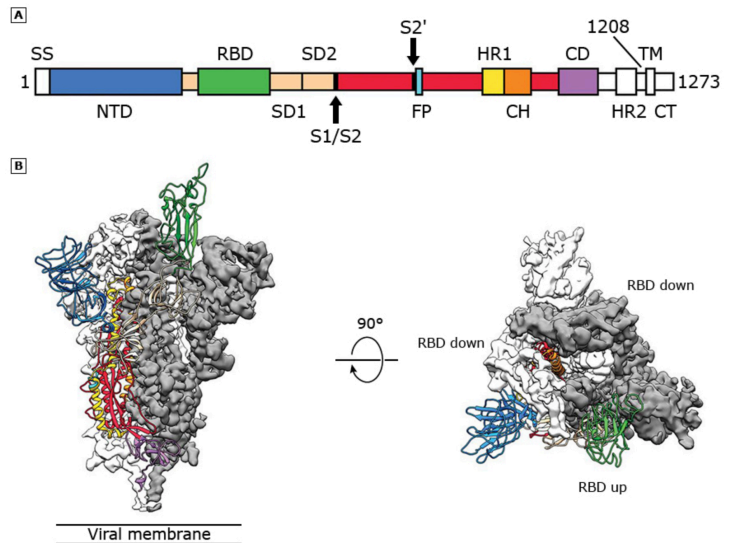
We are grateful to the scientists, physicians, and analysts who are courageously seeking the truth and, in the process, teaching us so much. We also thank several dozen "Internet epidemiologists" for their deep insights and for doing their own research. You know who you are.

– Bret Swanson

Additional charts, diagrams, and figures



Structure of SARS-CoV-2 spike protein in the prefusion conformation



(A) Schematic of SARS-CoV-2 spike (S) protein primary structure colored by domain. Domains that were excluded from the ectodomain expression construct or could not be visualized in the final map are colored white. SS: signal sequence; S2': S2' protease cleavage site; FP: fusion peptide; HR1: heptad repeat 1; CH: central helix; CD: connector domain; HR2: heptad repeat 2; TM: transmembrane domain; CT: cytoplasmic tail. Arrows denote protease cleavage sites.

(B) Side and top views of the prefusion structure of the SARS-CoV-2 spike (S) protein with a single receptor binding domain (RBD) in the up conformation. The two RBD down protomers are shown as cryo-electron-microscopy density in either white or gray and the RBD up protomer is shown in ribbons colored corresponding to the schematic in (A).

From: Wrapp D, Wang N, Corbett KS, et al. Cryo-EM structure of the 2019-nCoV spike in the prefusion conformation. Science 2020; 367:1260. Available at: <https://science.sciencemag.org/content/367/6483/1260.long>. Copyright © 2020 The Authors. Reproduced under the terms of the Creative Commons Attribution License 4.0.

Graphic 130132 Version 1.0

¹ The mRNA and adenovirus vectored DNA vaccines are based on ingenious technology. We might broadly call them gene therapies. The underlying technology platform will likely be used to deliver a range of drugs and vaccines in coming years. They are highly flexible platforms which can be used to design, program (as if software), and manufacture products extremely swiftly, compared to traditional drugs and vaccines. The great potential of the platforms, however, does not mean that the payload of the first generation Covid-19 vaccines – the Spike protein – or the rest of the formulations were chosen wisely, tested sufficiently, or deployed strategically.

² See the chart for Singapore in the Additional Charts, Diagrams, and Figures. Similar Covid-19 spikes are also happening, for the first time, in Vietnam, Malaysia, Thailand, and Taiwan, etc. These and many other countries experienced very little Covid-19 before the vaccines but now suffer substantial Covid-19 with the vaccines. Numerous heavily vaccinated northern European nations and northern U.S. states are now suffering surges as well.

³ In this report, when discussing “the vaccines,” we chiefly focus on the three available in the U.S. – the Pfizer-BioNTech and Moderna mRNA vaccines and the Janssen-Johnson & Johnson adenovirus vectored DNA vaccine – plus the Astra-Zeneca vaccine, which is similar to J&J. All four of these vaccines tell our cells to produce the SARS-CoV-2 Spike protein and can thus be grouped for certain (but of course not all) types of analysis.

⁴ See, for example, two NBER papers. The first suggests no real-time health benefit from lockdowns. The second estimates the harmful economic effects of the lockdowns could lead to around 900,000 additional excess deaths over coming years. (1) Virat Agrawal, Jonathan H. Cantor, Neeraj Sood, Christopher M. Whaley. The Impact of the Covid-19 Pandemic and Policy Responses on Excess Mortality. National Bureau of Economic Research. Working Paper 28930. <https://www.nber.org/papers/w28930>. And (2) Francesco Bianchi, Giada Bianchi, and Dongho Song. The Long-Term Impact of the COVID-19 Unemployment Shock on Life Expectancy and Mortality Rates. NBER Working Paper No. 28304. December 2020, Revised September 2021. JEL No. C32,E32,I14,J11. https://www.nber.org/system/files/working_papers/w28304/w28304.pdf.

⁵ See the excellent work of Michael Mina, until recently a Harvard scientist and physician, who has been the most effective advocate, both technically and practically, of cheap, rapid, home-based tests. Find him on Twitter at @michaelmina_lab.

⁶ John P. A. Ioannidis. European Journal of Clinical Investigation. March 14, 2021. <https://doi.org/10.1111/eci.13554>. <https://onlinelibrary.wiley.com/doi/epdf/10.1111/eci.13554>.

⁷ Here are just two of many references demonstrating the importance of vitamin D in the Covid-19 equation: (1) Pre-infection 25-hydroxyvitamin D3 levels and association with severity of COVID-19 illness. Amiel A. Dror, et al. medRxiv 2021.06.04.21258358; doi: <https://doi.org/10.1101/2021.06.04.21258358>; and (2) Linda Benskin. THE INFLUENCE OF VITAMIN D ON COVID-19 OUTCOMES Chapter 4 of Covid-19 and Nutraceuticals: A Guidebook. Bohr Publishers and New Century Health Publishers, LLC. https://www.researchgate.net/publication/354376762_THE_INFLUENCE_OF_VITAMIN_D_ON_COVID-19_OUTCOMES_Chapter_4_of_Covid-19_and_Nutraceuticals_A_Guidebook_Bohr_Publishers_and_New_Century_Health_Publishers_LLC.

⁸ One counter-example of smart and courageous public leadership came from Purdue University. In April-May 2020, at the height of panic, university president Mitch Daniels announced Purdue would open in the fall. He had done his homework and believed, with proper precautions, the university’s students and most of its staff could return to in-person education with little increased risk. <https://www.purdue.edu/president/messages/annual-open-letters/2101-med-openletter-full.php>. By the end of the fall 2020 semester, the “experiment” had succeeded. Daniels wrote: “As of the end of classes at Thanksgiving, we had identified 2,770 total student cases at Purdue. Less than one percent ever went past the fourth level of a six-level severity index devised by our Medical Advisory Team. More than 80 percent were completely without symptoms or had no more than one mild symptom, such as a headache or temporary loss of taste. Our 200+ positive cases among staff were only slightly more severe. During the entire semester, we saw only 7 hospitalizations, most very short-term and non-life-threatening. The nearly 1,000 beds we assembled to house those isolating (because positive for the virus) or quarantining (because of a contact and potential positive status) were never more than 26% occupied.”

⁹ See, for example, these papers: (1) SARS-CoV-2 Spike Protein Impairs Endothelial Function via Downregulation of ACE 2. Yuyang Lei, et al. *Circulation Research*. 2021 Apr 30;128(9):1323-1326. doi: 10.1161/CIRCRESAHA.121.318902. Epub 2021 Mar 31. <https://pubmed.ncbi.nlm.nih.gov/33784827/>; (2) SARS-CoV-2 Spike Impairs DNA Damage Repair and Inhibits V(D)J Recombination In Vitro. Hui Jiang and Ya-Fang Mei. *Viruses* 2021, 13(10), 2056; <https://doi.org/10.3390/v13102056>; (3) Persistence of SARS CoV-2 S1 Protein in CD16+ Monocytes in Post-Acute Sequelae of COVID-19 (PASC) Up to 15 Months Post-Infection. Bruce Patterson, et al. June 2021. DOI: [10.1101/2021.06.25.449905](https://doi.org/10.1101/2021.06.25.449905); and (4) The SARS-CoV-2 Spike protein disrupts human cardiac pericytes function through CD147-receptor-mediated signaling: a potential non-infective mechanism of COVID-19 microvascular disease. Elisa Avolio, et al. <https://www.biorxiv.org/content/10.1101/2020.12.21.423721v2.full.pdf>.

¹⁰ See this clever video by Dr. John Campbell comparing Plaxovid and ivermectin. <https://www.youtube.com/watch?v=ufy2AweXRkc>.

¹¹ See weekly Public Health Scotland's weekly Covid-19 statistical reports. <https://publichealthscotland.scot/publications/covid-19-statistical-report/covid-19-statistical-report-10-november-2021/>.

¹² Even the apparent short-lived effectiveness of the vaccines may be less impressive than the headline efficacy, although modest, suggests. See, for example, this short video analysis which questions the way we count vaccinated and unvaccinated, including the multi-week black hole of “jabbed-but-not-vaccinated.” “Are we calculating the correct effectiveness of COVID vaccines from real-world data?” Mahmudur Rahman. <https://www.youtube.com/watch?v=2MKzQpzWDDUA>. The well-known – but rarely counted – effect of the recently jabbed being more susceptible to infection in the first week or two is only one facet of this analysis. Not only do these people not get counted as a breakthrough case in the post-jabbed/pre-“fully vaccinated” period, but they almost surely will never be counted as a breakthrough case because they now have highly robust recovered immunity! And none of this accounts for those who enjoyed recovered immunity before they were ever jabbed. In both these cases, the vaccines get unearned credit. Or consider this hypothesis, slightly different, which shows that a mere one-week delay in death reporting could account for nearly all apparent efficacy. “Is vaccine efficacy a statistical illusion?” Norman Fenton and Martin Neil. <https://probabilityandlaw.blogspot.com/2021/11/is-vaccine-efficacy-statistical-illusion.html?m=1>. And this video by Norman Fenton explaining both effects. Systemic Flows in Covid-19 Vaccine Efficacy and Safety Statistics. November 18, 2021. <https://www.youtube.com/watch?v=6umArFc-fdc>.

¹³ UK Health Security Agency. Covid-19 vaccine surveillance report. Week 43. October 28, 2021. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1029606/Vaccine-surveillance-report-week-43.pdf. Previous weeks also used to compile these data. Some analysts dispute the official UK government data. They argue the Covid-19 reports, which use the NIMS population data instead of the ONS population figures, inflate the number of working-age unvaccinated. Others believe the ONS figures *underestimate* the number of unvaccinated, which would make vaccine efficacy even worse. (There is now a darkly comedic scuffle between the British Statistical Authority and the Health Security Agency. The Statistical Authority argues that HSA shouldn't present the numbers this way because people might get the idea that vaccines aren't effective. HSA argues that if it uses the ONS data, vaccination rates go way over 100% and the unvaccinated denominator goes negative.) Even if these critiques of NIMS are correct and the official data overstate the number of unvaccinated, the large numbers of infections among the vaccinated demonstrate the ineffectiveness of the vaccines.

¹⁴ Subramanian, S.V., Kumar, A. Increases in COVID-19 are unrelated to levels of vaccination across 68 countries and 2947 counties in the United States. *Eur J Epidemiol* (2021). <https://doi.org/10.1007/s10654-021-00808-7>. <https://link.springer.com/article/10.1007/s10654-021-00808-7>.

¹⁵ Some criticized Subramanian's analysis as a “snap-shot.” Which is a fair question. Analyst Mathew Crawford re-ran Subramanian's analysis several hundred times using different time spans and reconfirmed the result that there was little relationship between vaccination and Covid-19 cases, but that if there was one, it was mildly positive. See, for example, Systemic Covid-19 Vaccine Efficacy, Part 3. <https://roundingtheearth.substack.com/p/systemic-covid-19-vaccine-efficacy-fe3>.

¹⁶ See, for example, (1) Shedding of Infectious SARS-CoV-2 Despite Vaccination. Kasen K. Riemersma, et al. medRxiv 2021.07.31.21261387; doi: <https://doi.org/10.1101/2021.07.31.21261387>; (2) No Significant Difference in Viral Load Between Vaccinated and Unvaccinated, Asymptomatic and Symptomatic Groups When Infected with SARS-CoV-2 Delta Variant. Charlotte B. Acharya, et al. medRxiv 2021.09.28.21264262; doi:<https://doi.org/10.1101/2021.09.28.21264262>; and (3) Community transmission and viral load kinetics of the SARS-CoV-2 delta (B.1.617.2) variant in vaccinated and unvaccinated individuals in the UK: a prospective, longitudinal, cohort study. Anika Singanayagam, et al. October 29, 2021. [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(21\)00648-4/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(21)00648-4/fulltext). DOI:[https://doi.org/10.1016/S1473-3099\(21\)00648-4](https://doi.org/10.1016/S1473-3099(21)00648-4).

¹⁷ We've highlighted the case/transmission figures to assess the (in)effectiveness of various mitigation measures and to compare regions/countries. But we should not overly rely on positive tests as the most important metric. Positive tests are not necessarily "cases" of illness. The over-emphasis on positive tests using overly sensitive PCR testing, using high Ct values, is often misapplied to policy and has been a problem from the beginning.

¹⁸ Humetrix and DOD Project Salus. Effectiveness of mRNA Covid-19 Vaccines Against the Delta Variant Among 5.6M Medicare Beneficiaries 65 Years and Older. Weekly Update of September 28, 2021. Accessed at <https://renz-law.com/wp-content/uploads/DOD-Doc.pdf>.

¹⁹ Fiona P. Havers, et al. COVID-19-associated hospitalizations among vaccinated and unvaccinated adults ≥ 18 years – COVID-NET, 13 states, January 1 – July 24, 2021. August 29, 2021. <https://www.medrxiv.org/content/10.1101/2021.08.27.21262356v1>.

²⁰ Nathanael Fillmore, Jennifer La, Chunlei Zheng, Shira Doron, Nhan Do, Paul Monach, Westyn Branch-Elliman. The COVID-19 Hospitalization Metric in the Pre- and Post-vaccination Eras as a Measure of Pandemic Severity: A Retrospective, Nationwide Cohort Study. September 13, 2021. <https://www.researchsquare.com/article/rs-898254/v1>.

²¹ Nordström, Peter and Ballin, Marcel and Nordström, Anna, Effectiveness of Covid-19 Vaccination Against Risk of Symptomatic Infection, Hospitalization, and Death Up to 9 Months: A Swedish Total-Population Cohort Study. October 25, 2021. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3949410.

²² "COVID-19: Ireland's Co Waterford has one of the highest vaccination rates in the world - so why are cases surging?" Stephen Murphy. Sky News. November 6, 2021. <https://news.sky.com/story/covid-19-irelands-co-waterford-has-one-of-the-highest-vaccination-rates-in-the-world-so-why-are-cases-surg-ing-12461642>. "New figures this week show that Co Waterford has both the highest vaccination rate and the highest COVID-19 incidence rate in Ireland. It's partly been put down to a change in people's behaviour, with the jabs having made some over-confident." This implies the failure of the vaccines can be blamed on people who thought they would work.

²³ "Gibraltar cancels Christmas celebrations amid Covid spike." Millie Cooke. November 15, 2021. <https://www.express.co.uk/news/uk/1521786/Gibraltar-news-covid-cases-rise-Christmas-lockdown>.

²⁴ For a good presentation of the evolution of SARS-CoV-2 variants, see Trevor Bedford's September 14, 2021, video, summarizing data from the GISAID [NextStrain.org](https://gisaid.org) database. VIDD Seminar at Fred Hutch on "SARS-CoV-2 evolutionary dynamics" recorded Sep 14, 2021. https://www.youtube.com/watch?v=VErVD_H1BZ0. Slides here: <https://bedford.io/talks/sars-cov-2-evolutionary-dynamics-vidd/#/>.

²⁵ For deep background on SARS-CoV-2 variants and convergence, see, for example, David P. Martin, et al. The emergence and ongoing convergent evolution of the SARS-CoV-2 N501Y lineages. Cell. 2021 Sep 30;184(20):5189-5200.e7. doi: 10.1016/j.cell.2021.09.003. Epub 2021 Sep 7. <https://pubmed.ncbi.nlm.nih.gov/34537136/>.

²⁶ This highly simplified schematic is based on a similar one used by Geert Vanden Bossche. It captures the general concept but of course leaves out endless details and complexity.

²⁷ Geert Vanden Bossche is a vaccinologist who has worked for Gavi, Glaxo Smith Kline, and the Bill and Melinda Gates Foundation, among other vaccine organizations. His series of essays and videos can be found here: <https://www.geert-vandenbossche.org>. He provides a helpful list of literature on pathogenic dynamics here: <https://www.geertvandenbossche.org/supportive-references-from-literatu>. Note that in early March 2021, Vanden Bossche *predicted* with high specificity the erosion of vaccine effectiveness, the emergence of a dominant new strain (Delta), and the surge of new cases and severe health outcomes in the very places which vaccinated early and broadly. On March 6, 2021, he *warned* against mass vaccination during a pandemic. On March 8, he *predicted*: “For those who may have some difficulty in understanding how mass vaccination drives viral immune escape, it will suffice to watch infectivity and morbidity rates in those countries who have now succeeded in vaccinating millions of people in just a few weeks (e.g., UK, Israel, USA). Whereas these countries are now enjoying declining infectivity rates, they will undoubtedly start to suffer from a steep incline in Covid-19 cases....The steep decline we’re seeing right now may be followed by a short-lived plateau but a subsequent steep incline of (severe) disease cases is inevitable.”

²⁸ Imperfect Vaccination Can Enhance the Transmission of Highly Virulent Pathogens. Andrew F. Read, et al. PLoS Biology. July 27, 2015. <https://journals.plos.org/plosbiology/article/info:doi/10.1371/journal.pbio.1002198>.

²⁹ See this long list of papers, among others: (1) The Evolutionary Epidemiology of Pathogens During Vaccination Campaigns. Troy Day, et al. <https://arxiv.org/pdf/2109.13680.pdf>; (2) Multiple SARS-CoV-2 variants escape neutralization by vaccine-induced humoral immunity. Wilfredo F. Garcia-Beltran, et al. March 12, 2021. [https://www.cell.com/cell/fulltext/S0092-8674\(21\)00298-1](https://www.cell.com/cell/fulltext/S0092-8674(21)00298-1); (3) The SARS-CoV-2 Delta variant is poised to acquire complete resistance to wild-type spike vaccines. Yafei Liu, et al. bioRxiv 2021.08.22.457114; doi: <https://doi.org/10.1101/2021.08.22.457114>. <https://www.biorxiv.org/content/10.1101/2021.08.22.457114v1>; (4) The biological and clinical significance of emerging SARS-CoV-2 variants. Kaiming Tao, et al. Nature Reviews Genetics (2021). <https://www.nature.com/articles/s41576-021-00408-x>; (5) Harvey, W.T., Carabelli, A.M., Jackson, B. et al. SARS-CoV-2 variants, spike mutations and immune escape. *Nat Rev Microbiol* 19, 409–424 (2021). <https://doi.org/10.1038/s41579-021-00573-0>. <https://www.nature.com/articles/s41579-021-00573-0>; (6) Moore JB, Offit PA. SARS-CoV-2 Vaccines and the Growing Threat of Viral Variants. *JAMA*. 2021;325(9):821–822. doi:10.1001/jama.2021.1114. <https://jamanetwork.com/journals/jama/fullarticle/2776039>; (7) Van Egeren D, Novokhodko A, Stoddard M, Tran U, Zetter B, Rogers M, et al. (2021) Risk of rapid evolutionary escape from biomedical interventions targeting SARS-CoV-2 spike protein. PLoS ONE 16(4): e0250780. <https://doi.org/10.1371/journal.pone.0250780>. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0250780>; (8) Darren P. Martin, et al. The emergence and ongoing convergent evolution of the N501Y lineages coincides with a major global shift in the SARS-CoV-2 selective landscape. medRxiv [Preprint]. 2021 Jul 25:2021.02.23.21252268. doi: 10.1101/2021.02.23.21252268. Update in: *Cell*. 2021 Sep 7;; PMID: 33688681; PMCID: PMC7941658; and (9) SARS-CoV-2 501Y.V2 escapes neutralization by South African COVID-19 donor plasma. Constantinos Kurt Wibmer, et al. March 2021. <https://www.biorxiv.org/content/10.1101/2021.01.18.427166v2.full.pdf>.

³⁰ See, for example: (1) Carsetti, Rita et al. The immune system of children: the key to understanding SARS-CoV-2 susceptibility? *The Lancet. Child & adolescent health* vol. 4,6 (2020): 414–416. doi:10.1016/S2352-4642(20)30135-8; (2) Reyneveld G. IJstrand, Savelkoul Huub F. J., Parmentier Henk K. Current Understanding of Natural Antibodies and Exploring the Possibilities of Modulation Using Veterinary Models. A Review. *Frontiers in Immunology*. Volume 11. 2020. DOI: 10.3389/fimmu.2020.02139. <https://www.frontiersin.org/article/10.3389/fimmu.2020.02139>; and (3) Soleimanian Saeede, Yaghoobi Ramin. Harnessing Memory NK Cell to Protect Against COVID-19. *Frontiers in Pharmacology*. Volume 11. 2020. DOI=10.3389/fphar.2020.01309. <https://www.frontiersin.org/article/10.3389/fphar.2020.01309>.

³¹ Children successfully avoid and fight off Covid-19 for several reasons. In addition their broad innate immunity, children also have low expression of ACE2 receptors, which are a key pathway for SARS-CoV-2 to invade cells.

³² See, for example, Original Antigenic Sin: How First Exposure Shapes Lifelong Anti-Influenza Virus Immune Responses. Ali Zhang, Hannah D. Stacey, Caitlin E. Mullarkey and Matthew S. Miller. *J Immunol*. January 15, 2019, 202 (2) 335–340; DOI: <https://doi.org/10.4049/jimmunol.1801149>. Also see this Cell article for fundamental molecular dynamics underlying OAS and other Covid-19 dynamics: Grifoni A, Weiskopf D, Ramirez SI, Mateus J, Dan JM, Moderbacher CR, Rawlings SA, Sutherland A, Premkumar L, Jadi RS, Marrama D, de Silva AM, Frazier A, Carlin AF, Greenbaum JA, Peters B, Krammer F, Smith DM, Crotty S, Sette A. Targets of T Cell Responses to SARS-CoV-2 Coronavirus in Humans with COVID-19 Disease and Unexposed Individuals. *Cell*. 2020 Jun 25;181(7):1489–1501.e15. doi: 10.1016/j.cell.2020.05.015. Epub 2020 May 20. PMID: 32473127; PMCID: PMC7237901. <https://pubmed.ncbi.nlm.nih.gov/32473127/>.

-
- ³³ For a good explanation of natural versus vaccinal immunity at the cellular and molecular levels, see this talk by Robert Malone, MD, inventor of the mRNA drug/vaccine technology platform. <https://3speak.tv/watch?v=pan-demichealth/ptizyohg&jwsourc=cl>.
- ³⁴ See just one example among many analyses on the shortcomings of the CDC report. Martin Kulddorff. A Review and Autopsy of Two Covid Immunity Studies. The Brownstone Institute. <https://brownstone.org/articles/a-review-and-autopsy-of-two-covid-immunity-studies/>.
- ³⁵ The Brownstone Institute has compiled a large and growing list of studies demonstrating the superiority of recovered immunity versus vaccinal immunity. <https://brownstone.org/articles/79-research-studies-affirm-naturally-acquired-immunity-to-covid-19-documented-linked-and-quoted/>.
- ³⁶ Recovered immunity among the low-risk is also good for the vulnerable because it tends to build towards herd immunity.
- ³⁷ Christine S. Benn. “Should COVID-19 be a vaccine disease or a childhood disease?” British Medical Journal. July 18, 2021. <https://www.bmj.com/content/374/bmj.n1687/rr-8>.
- ³⁸ For a deep cost-benefit analysis of vaccination, see Ronald Kostoff, et al. “Why Are We Vaccinating Children Against Covid-19?” Toxicology Reports. September 14, 2021. <https://www.sciencedirect.com/science/article/pii/S221475002100161X>. Kostoff finds that vaccination may be unwise even for older cohorts. For young, healthy people, Kostoff shows it is reckless.
- ³⁹ Arora, P, Rocha, C., Kempf, A. et al. The spike protein of SARS-CoV-2 variant A.30 is heavily mutated and evades vaccine-induced antibodies with high efficiency. *Cell Mol Immunol* (2021). <https://doi.org/10.1038/s41423-021-00779-5>.
- ⁴⁰ Letter of Patricia Lee, MD. <https://www.sirillp.com/wp-content/uploads/2021/10/Letter-Regarding-Covid-19-Vaccine-Injuries-Dr-Patricia-Lee.pdf>.
- ⁴¹ Ashrani AA, Crusan DJ, Petterson T, Bailey K, Heit JA. Age- and Sex-Specific Incidence of Cerebral Venous Sinus Thrombosis Associated With Ad26.COV2.S COVID-19 Vaccination. *JAMA Intern Med*. Published online November 01, 2021. doi:10.1001/jamainternmed.2021.6352. <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2785610>.
- ⁴² See a follow-on letter from the Siri law firm, which summarizes and attaches the declarations of 11 physicians, who describe the adverse reactions of their patients and their own AEs. <https://www.sirillp.com/wp-content/uploads/2021/10/Letter-on-Behalf-of-Physicians-Regarding-Covid-19-Vaccine-Injuri-fee0f6941b97b076398c4e8607f573b0.pdf>.
- ⁴³ For a simpler presentation of the top-line data, see openvaers.com.
- ⁴⁴ Between 1990 and 2020, total cumulative VAERS U.S. reported deaths for *all vaccines* were 5,316.
- ⁴⁵ For additional comparison, recall the swine flu episode of the mid-1970s. A vaccine was quickly produced and deployed to some 25 million Americans. But doctors started noticing side-effects. After around 50 deaths, the program was halted. In all, some 250 people died from the vaccine, and around 450 people developed Guillain-Barré Syndrome.
- ⁴⁶ Harvard-Pilgrim study of EPS-VAERS. <https://digital.ahrq.gov/ahrq-funded-projects/electronic-support-public-health-vaccine-adverse-event-reporting-system>.
- ⁴⁷ Acute Allergic Reactions to mRNA COVID-19 Vaccines. Kimberly G. Blumenthal, et al. March 8, 2021. <https://jamanetwork.com/journals/jama/fullarticle/2777417>.
- ⁴⁸ See Rose’s useful introductory video analysis of VAERS with respect to Covid-19. <https://www.youtube.com/watch?v=Y4MViwU3XOo>. Also see Rose’s paper describing her Covid-19 VAERS analysis in more detail. Critical Appraisal of VAERS Pharmacovigilance: Is the U.S. Vaccine Adverse Events Reporting System (VAERS) a Functioning Pharmacovigilance System? Jessica Rose, PhD, MSc, BSc. The Institute for Pure and Applied Knowledge. https://cf5e727d-d02d-4d71-89ff-9fe2d3ad957f.filesusr.com/ugd/adf864_0490c898f7514df4b6fbc5935da07322.pdf.

⁴⁹ Spontaneous Abortions and Policies on COVID-19 mRNA Vaccine Use During Pregnancy. Aleisha R. Brock and Simon Thornley. *Science, Public Health Policy, and the Law*. Volume 4:130–143 November, 2021. Clinical and Translational Research. https://cf5e727d-d02d-4d71-89ff-9fe2d3ad957f.filesusr.com/ugd/adf864_2b-d97450072f4364a65e5cf1d7384dd4.pdf. “Our re-analysis indicates a cumulative incidence of spontaneous abortion 7 to 8 times higher than the original authors’ results ($p < 0.001$) and the typical average for pregnancy loss during this time period. In light of these findings, key policy decisions have been made using unreliable and questionable data. We conclude that the claims made using these data on the safety of exposure of women in early pregnancy to mRNA-based vaccines to prevent COVID-19 are unwarranted and recommend that those policy decisions be revisited.”

⁵⁰ A Report on Myocarditis Adverse Events in the U.S. Vaccine Adverse Events Reporting System (VAERS) in Association with COVID-19 Injectable Biological Products. Jessica Rose and Peter McCullough. *Current Problems in Cardiology*. October 1, 2021. <https://archive.md/mwcEG>.

⁵¹ SARS-CoV-2 mRNA Vaccination-Associated Myocarditis in Children Ages 12-17: A Stratified National Database Analysis. Tracy Beth Høeg, Allison Krug, Josh Stevenson, John Mandrola. medRxiv 2021.08.30.21262866; doi: <https://doi.org/10.1101/2021.08.30.21262866>. <https://www.medrxiv.org/content/10.1101/2021.08.30.21262866v1>.

⁵² The SARS-CoV-2 Spike protein disrupts human cardiac pericytes function through CD147-receptor-mediated signaling: a potential non-infective mechanism of COVID-19 microvascular disease. Elisa Avolio, et al. <https://www.biorxiv.org/content/10.1101/2020.12.21.423721v2.full.pdf>.

⁵³ See Figure 1. Nordström, Peter and Ballin, Marcel and Nordström, Anna, Effectiveness of Covid-19 Vaccination Against Risk of Symptomatic Infection, Hospitalization, and Death Up to 9 Months: A Swedish Total-Population Cohort Study. October 25, 2021. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3949410.

⁵⁴ See EuroMomo. <https://www.euromomo.eu/graphs-and-maps>.

⁵⁵ We reference once again this analysis by Norman Fenton and Martin Neil. The unspoken conclusion, seen toward the end of the video, is that there may be a large mortality spike soon after vaccination. “Is vaccine efficacy a statistical illusion?” November 14, 2021. <https://probabilityandlaw.blogspot.com/2021/11/is-vaccine-efficacy-statistical-illusion.html?m=1>. And this video by Norman Fenton. Systemic Flaws in Covid-19 Vaccine Efficacy and Safety Statistics. November 18, 2021. <https://www.youtube.com/watch?v=6umArFc-fdc>.

⁵⁶ The leaked CMS Medicare data were published by attorney Thomas Renz. <https://renz-law.com/covid-vaccine-coverup/>.

⁵⁷ This is just a rough check. A mere correlation is far from definitive. The nine states exhibit a wide range of death/population ratios. This likely reflects both the differing age stratifications within the 65+ cohorts and the varied underlying health characteristics of the cohorts in the different states. Other factors such as quality of healthcare and even vitamin-D producing sunshine could be important. Nevertheless, the relationship between the CMS and VAERS data suggests neither is *merely* a function of 65+ population. This very superficial analysis needs further inquiry.

⁵⁸ Chef-Pathologe pocht auf mehr Obduktionen von Geimpften. August 1, 2021. <https://www.sueddeutsche.de/wissen/wissenschaft-heidelberg-chef-pathologe-pocht-auf-mehr-obduktionen-von-geimpften-dpa.urn-newsml-dpa-com-20090101-210801-99-647273>.

⁵⁹ Torjesen I. Covid-19: Pfizer-BioNTech vaccine is “likely” responsible for deaths of some elderly patients, Norwegian review finds. *BMJ* 2021. 373 :n1372 doi:10.1136/bmj.n1372. <https://www.bmj.com/content/373/bmj.n1372>.

⁶⁰ See, for example, these video clips (<https://twitter.com/RWMaloneMD/status/1459187939116785664?s=20>) and Twitter threads (<https://twitter.com/wethepeople9/status/1446464285924790300?s=11>) showing large numbers of recent incidents among fit athletes. Such compilations are of course far from definitive. But when anecdotes keep piling up, when patterns jump out at us, they merit intense investigation.

⁶¹ For an analysis of rates of sudden collapse and/or death among FIFA soccer players, see <https://stephenc.substack.com/p/5-fold-increase-in-sudden-cardiac>.

⁶² See one possible explanation for adverse events and immune disturbance, but note these findings were not with the Western mRNA or vectored DNA vaccines. Liu, J., Wang, J., Xu, J. *et al.* Comprehensive investigations revealed consistent pathophysiological alterations after vaccination with COVID-19 vaccines. *Cell Discov* 7, 99 (2021). <https://doi.org/10.1038/s41421-021-00329-3>. <https://www.nature.com/articles/s41421-021-00329-3>. “[V]accination, in addition to stimulating the generation of neutralizing antibodies, also influenced various health indicators including those related to diabetes, renal dysfunction, cholesterol metabolism, coagulation problems, electrolyte imbalance, in a way as if the volunteers experienced an infection.” “Together, these data suggested that after vaccination, at least by day 28, other than generation of neutralizing antibodies, people’s immune systems, including those of lymphocytes and monocytes, were perhaps in a more vulnerable state.” “Comprehensive investigations revealed consistent pathophysiological alterations after vaccination with COVID-19 vaccines.”

⁶³ Another possible explanation is difficulty from the booster shots, which are occurring during this same period.

⁶⁴ Kate Wells. “ERs are now swamped with seriously ill patients — but many don’t even have COVID.” NPR. October 26, 2021. <https://www.npr.org/sections/health-shots/2021/10/26/1046432435/ers-are-now-swamped-with-seriously-ill-patients-but-most-dont-even-have-covid>.

⁶⁵ See the video of Western Australia premiere Mark McGowan’s press conference in this tweet. <https://twitter.com/justsee/status/1456215828345475081>.

⁶⁶ We focus here on mortality, but all-cause morbidity should be included in any deeper analysis. Hospitals full with non-Covid patients is a marker of this morbidity upsurge.

⁶⁷ See [USMortality.com](https://www.usmortality.com) for helpful curation of Census and CDC mortality data.

⁶⁸ EuroMomo mortality data. <https://www.euromomo.eu/graphs-and-maps>.

⁶⁹ Sweden may yet have a bad winter virus season. As of today, however, Sweden is not following other northern European nations in the most recent wave. If Sweden does better than its neighbors this winter, it will be strong evidence of the power of innate and recovered immunity.

⁷⁰ Remember, approximately zero percent of the population was vaccinated for 11.5 months in 2020.

⁷¹ The FDA published an update on the Pfizer six-month trial on November 8, 2021: <https://www.fda.gov/media/151733/download>. The previous six-month trial results had been published on July 28: Six Month Safety and Efficacy of the BNT162b2 mRNA COVID-19 Vaccine. Stephen J. Thomas, et al. medRxiv 2021.07.28.21261159; doi: <https://doi.org/10.1101/2021.07.28.21261159>. <https://www.medrxiv.org/content/10.1101/2021.07.28.21261159v1>. The July publication had shown 14 people in the placebo arm died and 20 in the vaccine arm died. The initial report, which only included pre-unblinding data, showed 14 placebo deaths and 15 vaccine deaths.

⁷² We reemphasize the ongoing effects of the lockdowns and closures, which harm health in a number of ways, including lost diagnosis and treatment, psychological distress, economic distress causing health declines, etc. See the NBER estimate referenced on page 1. We need to better disentangle the effects of Covid, the vaccines, and the lockdowns.

⁷³ Considerations in boosting COVID-19 vaccine immune responses. Philip R Krause, Thomas R Fleming, Richard Peto, Ira M Longini, J Peter Figueroa, Jonathan A C Sterne, Alejandro Cravioto, Helen Rees, Julian P T Higgins, Isabelle Boutron, Hongchao Pan, Marion F Gruber, Narendra Arora, Fatema Kazi, Rogerio Gaspar et al. *The Lancet*. 9-15 October 2021. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(21\)02046-8/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)02046-8/fulltext).

⁷⁴ Cardiologists, among other specialists, are warning of short-, medium-, and long-term damage due to the Spike-producing vaccines. See, for example, mRNA COVID Vaccines Dramatically Increase Endothelial Inflammatory Markers and ACS Risk as Measured by the PULS Cardiac Test: a Warning. Steven R Gundry. Nov 2021. *Circulation*. 2021;144:A10712. https://www.ahajournals.org/doi/10.1161/circ.144.suppl_1.10712.

⁷⁵ See, for example, NIH’s article on Immune Tolerance. <https://www.niaid.nih.gov/research/immune-tolerance>.

⁷⁶ See Dr. John Campbell summarize Uttar Pradesh’s test and treat program in this video: Home ivermectin based kits in India. September 22, 2021. <https://www.youtube.com/watch?v=eO9cJy3Rydc>. Also see reports of Juan Chamie, for example, <https://juanchamie.substack.com/p/ivermectin-in-uttar-pradesh>. Uttar Pradesh has low vaccination rates, compared to other Indian states and to the developed world.

⁷⁷ See a summary of 65 studies on the use of ivermectin to treat Covid-19 at ivmmeta.com.

⁷⁸ We are aware of the many ivermectin critiques. Very few are thoughtful. Of the recent analyses, the one by Scott Alexander might be taken seriously. “Ivermectin: Much more than you wanted to know.” November 17, 2021. <https://astralcodexten.substack.com/p/ivermectin-much-more-than-you-wanted>. Alexander pens incisive, thorough, even-handed appraisals on a wide range of topics. His critique of ivermectin is highly detailed, at least in its survey of official studies. Alexander, however, follows many others in throwing away most of the voluminous data from a diversity of sources. He reifies a particular kind of RCT study. Alexander offers a hypothesis: Some of the better studies which showed efficacy were conducted in places where worms are a problem. And worms can impair one’s ability to fight Covid. And steroids are sometimes given to fight Covid, but steroids exacerbate worms. And ivermectin fights worms. And so maybe ivermectin’s anti-worm properties give it a small, round-about, back-door anti-Covid usefulness. That’s quite a daisy chain. *If* this were April 2020 and we didn’t have 20 months of experience, with hundreds of millions of Covid-19 cases, frontline observations from physicians in diverse geographies and populations all over the world, several extraordinary case studies (such as Uttar Pradesh, Japan, Peru), *and* 65 clinical studies on ivermectin...*and if* one study in one place was the only early evidence in favor of ivermectin, *then* Alexander’s possible confounder of parasites in that location might be worth exploring. In that case, one narrow RCT might be picking up such an effect. RCT’s, however, measure *relative* efficacy. A small worm-interaction could explain small *relative* over-performance. But it couldn’t explain Covid going to zero in a large population, such as Uttar Pradesh. Even if there is some worm-IVM-Covid interaction, it’s unlikely to explain such large absolute effects in large populations in many parts of the world.

⁷⁹ Thomas J. Borody and Robert L. Clancy. Combination Therapy For COVID-19 Based on Ivermectin in an Australian Population. Preprint, TrialSiteNews. October 19, 2021. <https://trialsitenews.com/combo-therapy-for-covid-19-based-on-ivermectin-in-an-australian-population/>.

⁸⁰ See a comprehensive collection of data on a variety of early treatment options: <https://c19early.com>.

⁸¹ Anti-androgen therapies appear to be working as well. Doctors noticed that bald men, who tend to have higher androgen levels, do worse with Covid. So do women with elevated androgen levels.

⁸² Effect of early treatment with fluvoxamine on risk of emergency care and hospitalisation among patients with COVID-19: the TOGETHER randomised, platform clinical trial. Gilmar Reis, Eduardo, et al. The Lancet Global Health. 28 October 2021. [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(21\)00448-4/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(21)00448-4/fulltext). (Here was a previous, more limited study: Lenze EJ, Mattar C, Zorumski CF, et al. Fluvoxamine vs Placebo and Clinical Deterioration in Outpatients With Symptomatic COVID-19: A Randomized Clinical Trial. *JAMA*. 2020;324(22):2292–2300. doi:10.1001/jama.2020.22760.)

⁸³ This study, published on December 12, 2019, in the New England Journal of Medicine, showed that in a clinical trial remdesivir killed more than 50% of recipients. The safety committee thus discontinued remdesivir in the middle of the trial. A Randomized, Controlled Trial of Ebola Virus Disease Therapeutics. Sabue Mulangu, et al. <https://www.nejm.org/doi/full/10.1056/NEJMoa1910993>. Doctors from around the world report that remdesivir is not helping patients recover from Covid-19 but that it is often harming or killing them. Yet many health systems often require the doctors to use it on their patients. It may be because hospitals are paid a bonus of 20% of the entire patient bill if they use remdesivir.

⁸⁴ “World’s Leading ICU Doctor Files Lawsuit Against Hospital System After Being Barred from Administering Safe and Effective COVID-19 Treatments.” Frontline Covid-19 Critical Care Alliance. November 9, 2021. <https://covid19criticalcare.com/wp-content/uploads/2021/11/FLCCC-Marik-Case-Release-FINAL-Nov-9.pdf>.

⁸⁵ See letter from Sentara Health. <https://covid19criticalcare.com/wp-content/uploads/2021/11/Sentara-Healthcare-COVID-19-Treatment-Protocol.pdf>.

⁸⁶ See Joseph Varon bio: <https://covid19criticalcare.com/wp-content/uploads/2021/01/FLCCC-Alliance-member-CV-Varon.pdf>.

⁸⁷ Infection fatality rate of COVID-19 in community-dwelling populations with emphasis on the elderly: An overview-Cathrine Axfors, John P.A. Ioannidis. medRxiv 2021.07.08.21260210; doi: <https://doi.org/10.1101/2021.07.08.21260210>.

⁸⁸ Vaccine-Mandate Debate Makes It to Federal Agency Where Fauci Works. Jenny Strasburg. The Wall Street Journal. Nov. 7, 2021. <https://www.wsj.com/articles/vaccine-mandate-debate-makes-it-to-top-federal-research-agency-11636286400>. “I think the way we are using the vaccines is wrong,’ he said. In a July 30 email to Dr. Fauci and two of his lieutenants, Dr. Memoli called mandated vaccination ‘extraordinarily problematic.’ He says one of Dr. Fauci’s colleagues thanked him for his email. Dr. Fauci and a NIAID spokeswoman declined to comment. Dr. Memoli said he supports Covid-19 vaccination in high-risk populations including the elderly and obese. But he argues that with existing vaccines, blanket vaccination of people at low risk of severe illness could hamper the development of more-robust immunity gained across a population from infection.”