Ohio State

The Good News About Vaccine Hesitancy

By Daniel Engber

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The world has just seen the largest vaccination campaign in history. At least 13 billion COVID shots have been administered—more injections, by a sweeping margin, than there are human beings on the Earth. In the U.S. alone, millions of lives have been saved by a rollout of extraordinary scope. More than three-fifths of the population elected to receive the medicine even before it got its full approval from the FDA.

Yet the legacy of this achievement appears to be in doubt. Just look at where the country is right now. In Florida, the governor—a likely Republican presidential candidate—openly pursues the politics of vaccine resistance and denial . In Ohio, kids are getting measles . In New York, polio is back . A football player nearly died on national TV, and fears about vaccines fanned across the internet . Vaccinologists, pediatricians, and

public-health experts routinely warn that confidence is wavering for every kind of immunization , and worry that it may collapse in years to come.

In other words, America is mired in a paradoxical and pessimistic moment. “We’ve just had a national vaccination campaign that has exceeded almost all previous efforts in a dramatic fashion,” says Noel Brewer, a psychologist at the University of North Carolina who has been studying decision making about vaccines for more than 20 years, “and people are talking about vaccination as if there’s something fundamentally wrong.”

It’s more than talk. Americans are arguing, Americans are worrying, Americans are *obsessing* over vaccines; and that fixation has produced its own, pathological anxiety. To fret about the state of public trust is rational: When vaccine adherence wobbles, lives are put in peril; in the midst of a pandemic, the mortal risk is even greater. More than 60 million Americans haven’t gotten a single COVID shot, and a few thousand deaths are attributed to the disease every week. But the scale of this concern—the measure of our instability—may be distorted by the heights to which we’ve climbed. Evidence that the nation has arrived at the brink of collapse does not hold up to scrutiny. No one knows where vaccination rates are really heading, and the coming crash is more an idea—a projection, even—than a certainty. The future of vaccination in America may be no worse than its recent past. In the end, it might be better.

T he first alarms about a widespread vaccination crisis—the first suggestions that a leeriness of COVID shots had “ spread its tentacles into other diseases ”—were raised by clinicians. Megha Shah, a pediatrician with the Los Angeles public-health department, told me that she began to worry in the spring of 2021, while volunteering at a medical center. Two years earlier, she recalled, working there had been uneventful. She’d meet with parents—mostly from low-income Latino families—to discuss the standard vaccination schedule: *O kay, here’s what we’re recommending for your child . This protects against this; that protects against that.* The

parents would ask a couple of questions, and she'd answer them. The child would be immunized, almost every time.

But in the middle of the COVID-vaccine rollout, she found that those conversations were playing out differently. "Oh, I'm just not sure," she said some parents told her. Or, "I need to talk this over with my partner." She saw families refuse, flat-out, to give their infants routine shots. "It just was very, very surprising," Shah said. "I mean, questions are good. We want parents to be engaged and informed decision makers." But it seemed to her—and her colleagues too—that healthy "engagement" had gone sour.

Last year, she and her colleagues took a closer look. For a study published in *Pediatrics* , they drew on national survey data collected from April 2020 through early 2022, of parents' attitudes toward standard childhood vaccines. In some respects, the results looked good: Parents endorsed the importance and effectiveness of these vaccines at a high and stable rate throughout the pandemic—in the vicinity of 91 percent. But over the same period, concerns about potential harms marched upward . In April 2020, about 25 percent of those surveyed agreed that vaccines "have many known harmful side effects" and "may lead to illness or death"; by the end of the year, that number had increased to 30 percent, and then to nearly 35 percent the following June. "Parents still seemed very confident overall in the benefits of vaccinations," Shah told me, "but there was a huge jump over the course of the pandemic about the safety."

[Read: What's really behind global vaccine hesitancy?]

Those results jibed with a theory that has now been invoked so many times , it reads as common knowledge: "Perhaps this was a spillover effect," Shah said, "from all of the vaccine misinformation that was circling during the pandemic." That effect—the spreading tentacles of doubt—can be seen around the world, says Heidi Larson, a professor at the London School of Hygiene & Tropical Medicine who has studied attitudes toward vaccination across Europe since the

start of the coronavirus pandemic. “The public-health community was assuming that COVID would be a great boon to public confidence in vaccines, but it hasn’t worked out that way. The trend has been actually a *negative* knock-on effect,” Larson told me. In a troubling alignment, even anti-vaccine activists now endorse the notion of hesitancy spillover, calling it a “ wonderful silver lining ” to the pandemic.

But hold on a minute. Here in the U.S., it’s certainly true that vaccine worries have been broadcast and rebroadcast, at ever greater volumes, through a clamorous network of influencers and politicians. This campaign of hesitancy is growing more open and insistent by the day, and the consequences can be atrocious: Americans with false beliefs about vaccines are falling sick and dying stubborn and alone . But even as these anecdotes accrue, misinformation’s greater sway—the extent to which it shapes Americans’ behavior toward vaccines for COVID, measles, or the flu—remains murky, if not altogether undetectable. The best numbers to go on in this country, drawn from polls of people’s attitudes about vaccines and official vaccination surveys from the CDC, don’t hint at any comprehensive change. When concerning blips and mini-trends arise—shifts in parents’ attitudes, as seen in Shah’s research, or drops in local rates of children getting immunized—they’re set against a landscape with a flat horizon.

It’s not a pretty view, for that: The U.S. lags five points behind the average wealthy country in its rate of people fully vaccinated against COVID, and two points behind in its vaccination rate for measles. And even blips can translate into many thousands of at-risk kids, Shah pointed out. Yet one might still be grateful for the sameness overall. A seedbed of resistance to the COVID shots, disproportionately Republican, was already present near the start of the pandemic, and hasn’t seemed to thrive despite two years’ worth of fertilizer runoff from Fox News and other outlets spewing doubt. In August 2020, the Harris Poll’s weekly COVID-19 tracker found that 15 percent of American adults said they were “not at all likely” to get the vaccine when it finally became available. In August 2022, Harris reported

that 17 percent weren't planning to be immunized. Other long-running surveys have found similar results. In September 2020, Kaiser Family Foundation's vaccine monitor pegged the rate of refusal at 20 percent. In December 2022, it was … still 20 percent .

The most recent uptake numbers from the CDC suggest that children born in 2018 and 2019 (who would have been babies or toddlers when COVID first appeared) had *higher* vaccination rates by age 2 than children born in 2016 and 2017. Some of these kids did miss out on shots amid the pandemic's early lapses in routine medical care , but they quickly caught up. Another, more alarming batch of data from the CDC shows that measles-mumps-rubella coverage among the nation's kindergartners has dropped for two years in a row , down from 95.2 to 93.5 percent, and is now lower than it's been since at least 2013. Still, the proportion of kids who get exempted from school vaccine requirements for medical or philosophical reasons has hardly changed at all, and the headline - grabbing " slide " in rates appears instead to be at least in part a product of "provisional enrollments"—i.e., children who missed some vaccinations (perhaps in early 2020) and were allowed to enter school while they caught up. If there really is a wave of newly red-pilled, anti-vaxxer parents , then going by these data, they're nowhere to be seen.

S ome public-health disasters hit like hurricanes; others spread like rust. "We may not have a full picture yet," Shah told me, referring to the latest evidence from the CDC on where vaccination rates are heading. "My gut and my clinical experience tell me that it's too soon to say."

Other experts share that view. Robert Bednarczyk, an epidemiologist at Emory University, has been estimating the susceptibility of U.S. children to measles outbreaks since 2016. National immunization surveys have not shown substantial drops in coverage for 2020 and 2021, he told me, "but there is a large caveat to this. These surveys have a lag time." Any children from the CDC's data set who were born in 2018, he noted, would have gotten most of their vaccines before the pandemic started, during their

first year of life. The same problem applies to teens. The government's latest stats for adolescents—which looked as good as ever in 2021—capture many who would have gotten all their shots pre-COVID. Until more data are released, researchers still won't know whether or how far kids' vaccination rates have really dipped during the 2020s.

The time delay is just one potential problem. Parents who are suspicious of vaccines, and angry at the government for encouraging their use, may be less willing to participate in CDC surveys, Daniel Salmon, the director of the Institute for Vaccine Safety at Johns Hopkins Bloomberg School of Public Health, told me. "Having studied this for 25 years, I would be surprised if we don't see a substantial COVID effect on childhood vaccines," he said. "These data are a little bit reassuring, that it's not, like, an *oh-my-god huge* effect. But we need more time and more data to really know the answer."

[Read: How many Republicans died because the GOP turned against vaccines?]

Uncertainty doesn't have to be a source of terror, though. Early uptake data already provide some signs of a "vaccine-hesitancy spillover effect" happening in reverse, UNC's Brewer told me, driving *more* enthusiasm, not less, for getting different kinds of shots. Just look at how the push to dose the nation with half a billion COVID shots goosed the rates of grown-ups getting flu shots: For decades now, our public-health establishment has pushed for better influenza coverage, even as the rate for older Americans was stuck at roughly 65 percent . Then COVID came along and, voilà, senior citizens' flu-shot coverage jumped to 75 percent—higher than it ever was before. This all fits with a familiar idea in the field, Brewer said, that going in for any one vaccine makes you much more likely to get another in the future. "There does seem to be a sort of positive spillover," he said, "probably because the forces that led to previous vaccinations are still mostly in place."

Even some of the scariest signals we've seen so far—reports that anti-vaccine sentiment is clearly on the rise—can seem ambiguous, depending on one's breadth of view. Consider the finding from Heidi Larson's group, that vaccine confidence has declined across the whole of the European Union throughout the pandemic, according to surveys taken in 2020 and 2022. The same report says that attitudes have now returned to where they were in 2018 and that confidence in the MMR vaccine, in particular, remains higher than it was four years ago. Given that the 2020 surveys were conducted mostly in March, at the very onset of the first pandemic lockdowns, they might have captured a temporary spike of interest in vaccines. After all, vaccines can seem more useful when you're terrified of death .

In other words, America may truly have experienced a recent drop in vaccine confidence—but from an inflated and unsustainable high. That could help explain other recent findings too, including Shah's. "You need to take the long view," says Douglas Opel, a pediatric bioethicist at Seattle Children's Hospital who has been studying the ups and downs of vaccine hesitancy for more than a decade. For a paper published last July, he and colleagues looked at vaccine attitudes among 4,562 parents from late 2019 to the end of 2020. They found that the parents grew *more* enthusiastic about childhood immunizations when the pandemic started, but their feelings later returned to baseline.

Larson told me that a "transient COVID effect" may well explain some of what her team has found, but said it was very unlikely to account in full for the worrying trend. In any case, she told me, "we shouldn't assume this and should instead make an extra effort to continue to build confidence."

No crunching of the numbers can excuse the spread of vaccine misinformation, or suggest that those who peddle it are anything but a hateful scourge on individuals and a threat to public health. But you can't simply ignore the fact that, as far as we can see, all the gnashing about vaccines' supposed risks simply hasn't changed a lot of people's

minds. It certainly hasn't caused a steep and sudden rise in vaccine refusal. The idea that we're in the midst of some new vaccine-hesitancy contagion is based as much on vibes as proven fact.

The problem is, bad vibes can leave us prone to misinterpretation. Take the recent measles outbreak in Ohio: It's alarming, but not so relevant to recent trends in vaccination, despite many claims to that effect. More than one-quarter of the affected children were too young to have been eligible for the MMR vaccine, while others were old enough to have missed their first shot by 2020, before any hesitancy "spillover" could have taken place. And at least a meaningful proportion of the affected families, from the state's Democratic-leaning Somali American community, wouldn't seem to represent the GOP's white, unvaccinated constituency.

The stark politicization of the COVID shots can be misread too. Despite the 30-point gap between Democrats and Republicans in COVID vaccination rates, those rates are much, much higher—for members of both parties—than they've ever been for flu shots. And interparty differences in flu-shot uptake seem to be long-standing. A preprint study from Minttu Rönn, a researcher at the Harvard T. H. Chan School of Public Health, and colleagues found a broadening divide in coverage between Democratic- and Republican-voting states, based on data going back to 2010. But this may not be a bad thing. Rönn doesn't think the change arises from a loss of trust among Republicans; rather, she told me, it looks to be related to rising flu-shot coverage overall, with proportionally greater gains in Democratic-leaning areas. (That difference could be the result of local attitudes, ease of access, or insurance coverage, she said.) In other words, red states aren't necessarily falling behind on vaccination. Blue states are surging forward.

[Read: Vaccination in America might have only one tragic path forward]

Optimism here may seem perverse. COVID booster uptake is absurdly low right now, even for the elderly. The politicization of vaccines

(whenever it began) certainly isn't letting up . Given what would happen if trust in vaccination really did collapse, perhaps it makes more sense to err on the side of freaking out. As Larson said, every effort should be taken to build confidence, no matter what.

But the truth of what we know right now ought to be important too. Maybe it's okay to feel okay. Maybe there's value in maintaining calm and taking stock of what we've accomplished or what we've maintained in the face of all these efforts to confuse us. At the risk of trying way too hard to find some solace in disturbing facts, here's another case in point. Remember Shah's results, that parents' concerns about the health effects of childhood vaccines have steadily gone up throughout the pandemic, even as their belief in vaccines' benefits stayed high? That increase wasn't clearly more pronounced in any specific group. Belief that vaccination can result in illness or death went up across the board for men and women in the survey, for young and old, for Black and white alike. It rose among Republicans and also Democrats—in just about the same proportions. If America's parents have been getting more attuned to potential risks from vaccination, we're doing it together.

I'm in that number too. As a scientist by training and a science journalist by trade, I've been reporting and editing stories about vaccination for years. Still, I've never thought so hard about the topic, and in such critical detail, as I have since 2021. At no point in my life has vaccination been this pervasive, perplexing, and important. When it came time to get my children COVID shots, I learned everything I could about potential risks and benefits. I looked at data on the incidence of myocarditis , I considered very rare but deadly outcomes , and I weighed the efficacy of different shots against their measured side effects . These investigations did not arise from distrust of authority , podcast propaganda , or a belief in microchips so small they fit inside of a syringe . I wasn't fearful; I was curious. I had questions, and I got answers—and now every member of my family has gotten their shots.

We've all been forced by circumstance to think in different ways about our health. Before the pandemic, Larson told me, most people simply didn't have to pay attention to vaccines. Parents with young children, sure, but everybody else? "I think they probably said, *Yeah, vaccines are important. Yeah, they're safe enough* ," she said. But now the stakes are raised across the population. "I mean, there are these groups around the world where you're like, 'why do *they* care about vaccines?' And it's because of COVID."

The emergence of so many groups with newfound interest in vaccines could end up being dangerous, of course—in the same way that newly minted drivers are a menace on the road. "A lot of people went online asking questions about vaccines," Larson told me, in a tone that made it sound as though *online* were a synonym for "straight to hell." But sometimes asking questions gets you useful information, and sometimes useful information leads to wise decisions. Debates about vaccines may be louder than they've ever been before, but that doesn't mean that vaccination rates are bound to fall.

Even if the situation isn't getting that much worse, the country might still be left to wallow in its status quo. Yes, more than 200 million Americans have been fully immunized against COVID—and more than 100 million haven't. "This has been a problem for a long time," Daniel Salmon told me. "It was already 'a crisis in confidence' a dozen years ago. We don't see a free fall—that's somewhat reassuring—but that's very different from saying that we're good to go."

The fact of this crisis, however long it's been around, will never matter more than its effects. After all, "confidence" itself is not the only factor, or even the most important one, that determines who gets shots. "Generally speaking, access to vaccination is a much bigger driver than what people think and feel," Noel Brewer told me. Early in the pandemic, lots of parents wanted to vaccinate their kids and simply couldn't. Now many of them can. But obstacles persist, and their effects aren't evenly distributed.

According to the CDC, toddlers' vaccination rates are somewhat lower among those who live in poverty, or reside in rural areas, or don't identify as white or Asian. Since the pandemic started, these gaps in opportunity appear to have increased. A grand and tragic spillover of people's vaccination doubts—the anti-vaxxers' hoped-for "silver lining" to the pandemic—may or may not come. In the meantime, though, there are other problems to address.