An important part of science is admitting when we're wrong

This week started with a whole lot of people getting very angry about someone being wrong on the internet. This time, it was computer scientist Steven Salzberg, who wrote a blog post on *Forbes* arguing that people should start vaccinating now — phase 3 clinical trials had just started. They seemed to be going well. Why not start passing out doses to willing, informed volunteers?

Well, a whole bunch of reasons, most of which boil down to some variation of *that's what the trials are there for.* The evidence that's needed to move something into the third level of human testing is pretty high — but not high enough to justify use on the broader population, as biostatistician Natalie Dean pointed out in a *New York Times* rebuttal of the *Forbes* post.

"It's just fundamentally wrong to think that because there's an emergency, that we should somehow throw out aspects of scientific research," Alex John London, director of the Center for Ethics and Policy at Carnegie Mellon University told *Verge* reporter Nicole Wetsman this week.

In fact, Wetsman writes, sticking to the process, gathering the evidence, and making sure the vaccine *actually* works is what makes the vaccines we have today so safe. There are some things we can speed up, but widely distributing untested vaccines would be reckless.

Hundreds of people showed up online to point out the error of Salzberg's ways. But instead of this dissolving into drama, or fading into the background of new Twitter fights and

controversies, something very different happened.

“I was wrong,” Salzberg wrote in a new *Forbes* post. “After reading many of the responses to my article, some of them outlining the risks in greater detail, I have concluded that (1) the risks are greater than I presented them, and (2) the benefits are not as great as I had thought.”

It’s always a better feeling to be right on the first try. Doing background research first and challenging your own biases can avoid screw-ups before they happen. But having the flexibility to admit that we were wrong, like Salzberg did, will serve us well as we head through the next phase of the pandemic.

Many of the things we thought at the start of the pandemic were wrong. Asymptomatic and pre-symptomatic people *can* transmit the virus. The virus probably *does* spread through the air. There’s a whole lot more that we just don’t know yet. Everyone is learning about this new, world-altering virus in real time, and that means that sometimes we get lost, or head down dead ends, or want to speed ahead, if only to make the suffering stop.

Rigorous examination of evidence and beliefs is part of what makes the entire process of science work, and it’s what brings us back toward the truth, even when we veer away from it. There’s only so much we can do to speed up science — but by working together, we might be able to keep ourselves on the right track.

Here’s what else was going on this week.

Research

Even Asymptomatic People Carry the Coronavirus in High Amounts
A study out of South Korea found that people who are infected with the coronavirus but don’t have symptoms have just as much of the virus in their bodies as people *with* symptoms. That

doesn’t fully answer the question of how easily they transmit the disease, but it is alarming for people trying to track the virus’s spread. (Apoorva Mandavilli / *The New York Times*)

Immunology Is Where Intuition Goes to Die
On a good day, our immune system is bizarre. A pandemic lays out exactly how much we still don’t know about how this vitally important part of our body works. Take a deep dive into the complexities of the immune system and the field devoted to studying it here. (Ed Yong / *The Atlantic*)

Development

Novavax’s Covid-19 vaccine shows promising immune response, early data show
Let’s start off with the big caveat that these results are from a phase 1 trial that has not been peer-reviewed. The early results here are encouraging, but still not enough to say whether this vaccine will work. (Damian Garde / *Stat*)

Hydroxychloroquine can’t stop COVID-19. It’s time to move on, scientists say
This anti-malarial drug has sucked up time, attention, and money in the search for effective COVID-19 treatments. But it’s just not working out. *Science News* lays out exactly why it’s time to ditch this treatment and move on to things that might actually work. (Tina Hesman Saey / *Science News*)

Perspectives

> *The cupcakes, the gift bags full of dollar-store toys and candy, the afternoon my daughter spent in her bedroom eating pizza and watching a movie with a friend … March 12 was our last futile glimpse of normalcy before the reality of the pandemic truly settled in.*

— Journalist Willy Blackmore writes about his experience with COVID-19 in **“COVID-19 Is Horrible — So Is Worrying You’ve**

Infected Someone” for *New York Magazine*’s *Intelligencer.*

Contact tracing in the US is in bad shape. Carolyn Kormann takes readers on her frustrating quest to figure out where she got the virus, even after taking precautions. (Carolyn Kormann */ The New Yorker)*

A pregnant woman with covid-19 was dying. With one decision, her doctors saved three lives.
A harrowing oral history of how doctors successfully treated a pregnant woman with COVID-19. (Caitlin Gibson */ The Washington Post)*

More than numbers

To the more than 19,405,013 people worldwide who have tested positive, may your road to recovery be smooth.

To the families and friends of the 712,906 people who have died worldwide – 161,367 of those in the US – your loved ones are not forgotten.

Stay safe, everyone.

https://www.theverge.com/21358867/vaccine-clinical-trials-trust-science-wrong