

## Letter 39: Omicron Recedes

February 14, 2022

Dear Daughters,

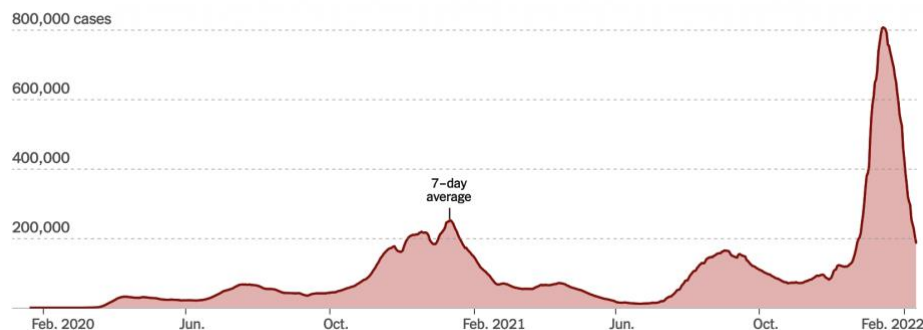
I am very happy to report that Nikki, who has been battling COVID-19 since returning to NYC after Christmas six weeks ago, seems to be slowly recovering. A battery of medical tests have us hopeful that there are no serious long-term problems, just a slow, difficult battle with the virus. Her heart is still being looked at, but she is now able to go on walks, although not at her normal Rocket-man pace.



Couscous, the cat who shares the NYC apartment with Nikki and Matt, has been looking after Nikki, his human pet. Cats as well as humans can become infected with COVID-19. So, might Nikki have given COVID-19 to Couscous? Or the reverse? More on this later in this letter.

## Goodbye, Omicron

The blazing fast infection of our country with the Omicron variant of COVID-19 peaked at just over 800,000 new cases a day on January 15 and has been falling rapidly in the days since. The spike of new infection is now below 200,000 a day and still declining:



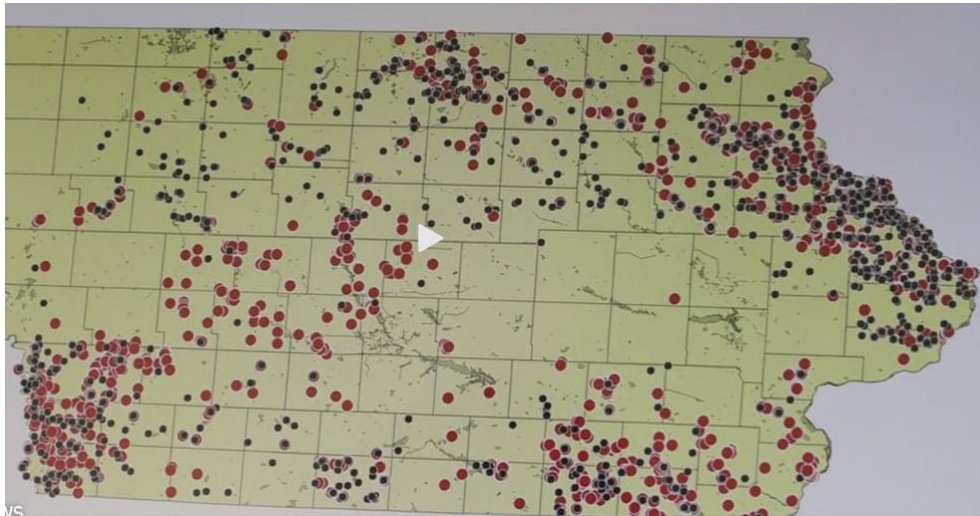
How far will it fall? Your guess is as good as mine. The January spike that you see in the above graph is very much an Omicron spike. There is very little Delta variant being reported in the United States any more. Last July, before Delta emerged here, the number of new daily coronavirus infections hovered for weeks at around 12,000 a day. After Omicron dissipates and with no Delta, can we fall so low again? I am crossing my fingers and hoping so. At the rapid rate at which the Omicron infection spike is falling, we should know soon. As a point of reference, we had 103,000 cases of influenza a day last winter, a normal year for flu.

If we find ourselves in a world of fewer than 10,000 new COVID-19 cases a day throughout the United States, I am going to recommend that our family relax its COVID-19 restrictions a bit. Imagine being able to go out to a restaurant for dinner. I'd venture that if we reach less than 10,000 new COVID-19 cases nationally per day, we can consider the full-blown pandemic over for our country -- after two long years, 77 million cases and 908,000 deaths.

Until that day comes, however, I would recommend that we stay masked in public and continue to avoid others at close proximity indoors. Of course, risk factors vary. We maturely-aged high riskers will need to take precautions that people in their 20s who are vaccinated and boosted may not elect to take. However, I cannot help but notice that Nikki and many of her New York friends, every one of them vaccinated, boosted, and in good health, all contracted COVID-19 within the same two weeks. While Niki's friends' symptoms receded within a week, Nikki's have not. We still have much to learn about what makes someone susceptible to long COVID. Suffice to say, I don't want any of us to have to go through what Nikki has had to endure. Or much worse -- about 1% of the new COVID-19 infections occurring today will lead to death. Being careful each day in the coming weeks is every bit as important as it was each other day we have had to be careful over the last two years.

## A Bambi Variant ?

In the midst of this very good news about Omicron's decline have come reports that I find quite disturbing. When routinely checking frozen lymph node tissue harvested from deer killed by hunters or cars for Mad Cow disease, a researcher in Iowa also checked some of the samples for COVID-19 – and got hits! He and his team then checked over 4,000 samples collected throughout the state (the dots on the map) Over 60% tested positive for COVID-19 (the red dots on the map). When sequenced, the coronavirus isolated from the Iowa white tailed deer proved to be the human Omicron variant, with a few new mutations. There can be no doubt. The virus has passed from humans to deer.



## Spillover and Spillback

The passage of a virus from humans to an animal species is called spillover. That there has been spillover from humans to deer is not surprising. Dogs and cats have become infected with human strains of COVID-19, as well as minks, ferrets, lions, tigers and many other animal species. What is surprising is how rapidly the virus spread among deer across the state. Samples of deer tissue collected in Iowa before December show only one positive for COVID-19, and on retesting that one positive proved to be a false positive. Two months later, in February, over 2,400 samples tested positive for COVID-19 out of some 4,000 samples examined -- the virus

had infected more than 60% of the deer sampled, over half the deer in the state! They don't seem to get sick, but rapidly infect one another.



Coronaviruses enter animal cells by attaching to what are known as ACE2 receptors, triggering their entry into cells. Of the several hundred species for whom the ACE2 receptor gene has been sequenced, deer (and cats) are among the few that have ACE2 receptors very similar to humans, so the fact that spillback has occurred to deer should come as no surprise. The rapidity with which it has spread among deer, however, is alarming.

Similar results are being seen all over the country. Antibodies to COVID-19 are being detected in deer from Illinois, Michigan, New York, and Pennsylvania. When the same rapid COVID tests we use to test ourselves are employed to check for the virus in captive deer such as this one at a wildlife center in Texas, almost all deer prove to be infected.



COVID-19 spillback to white tailed deer seems widespread in both the United States and Canada. How did it happen? How did the virus get transmitted from a human to a deer? We don't know. Perhaps deer ate infected human garbage. Perhaps deer came in contact with a vector species, like a feral cat, that had acquired the virus from humans.

Does the reverse occur? Can we humans catch a virus from an animal? Sure. COVID-19 is thought to have passed from Chinese bats to humans, for example. The passage of a virus from an animal species to humans is called spillover. Humans first contracting COVID-19 from bats is a prime example of spillover. Spillover has also occurred among Danish commercial minks. The minks acquired COVID-19 from humans (spillback) and then transmitted COVID-19 back to humans (spillover).

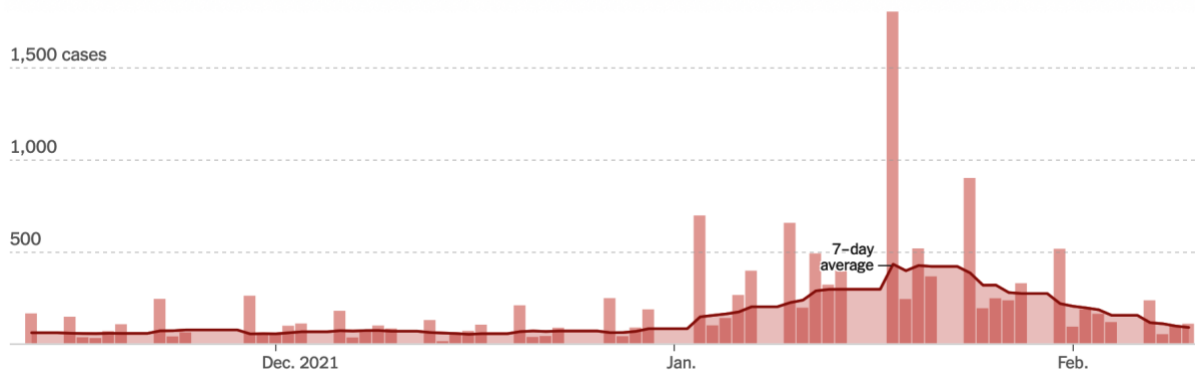
The spillover of COVID-19 from commercial mink back to humans was scary, as the virus had developed novel mutations. New mutations may give a variant new properties that make them more dangerous. The new human COVID-19 variant Omicron, for example, was much more contagious than earlier variants of the virus. Because of the possibility of new mutations, spillover is always very dangerous, and should be prevented if at all possible -- that is why the Danes exterminated all seventeen million of their commercial mink.

It is not known if pet cats like Couscous might reinfect humans. Deer spillover is, however, a scary possibility. Some 30 million white tailed deer roam the United States. If they become a reservoir for the virus, COVID-19 could mutate repeatedly as it passes from deer to deer, and eventually spillover to humans as a dangerous new variant. Knowing this, and that many (most?) of United States white tailed deer are infected, I would not eat deer meat. Nor should any hunter. However, many will. We have not read the last chapter of this story yet.

## **All Quiet On the Western Front**

Caitlin continues to hunker down in Santa Fe. The Omicron variant, quite common in some parts of the state, is not yet common in Santa Fe.

You can see the absence of an Omicron peak in the daily new case numbers from Santa Fe: The late-January/February numbers are still quite low.



However, Santa Fe may not be the safe haven from Omicron this graph suggests. Why? Because the Santa Fe test positivity numbers are very high at 35%, indicating that many infected people are not being counted.

So Caitlin, please continue your careful living. It cannot be easy to weather the pandemic and all attendant stresses from a small (admittedly beautiful) Santa Fe casita (an adobe cottage). No small thing, I think, to keep safe while living on your own. I am proud to say Caitlin has managed to not only stay safe and creative, but has continued to publish new work in exciting journals. While I suspect writing is by its very nature a lonely sort of thing, it is no small achievement to do it well while boxed in by COVID-19. I'm a proud daddy!

## **Jed Will Soon Be Vaccinated**

This last week Susie and Ben sold their house in Atlanta! They will move out in early March, perhaps spend a few weeks in Florida, and then move to St. Louis. Until they find a house to purchase, they will live at home with us. I am very much looking forward to being able to spend time with them and little Jed.



Only two years old, soon after Jed arrives in St. Louis, she should be able to get a COVID-19 vaccine shot. Yesterday Pfizer/BioNTech was to submit their clinical trial data for children as young as 6 months old to the Food and Drug Administration for its review. However, the efficacy of the two-shot low-dose toddler vaccine was not great, so Pfizer today postponed their application until additional data for a three-shot toddler regime is available. Looks like we are now looking at an April Pfizer application and a June vaccination date for Jed.



All very exciting. Jed, always exploring, is going to love St. Louis. I am sure of it. I, of course, will be the proud granddad, happy to help her see out through the many windows she will encounter in coming years. She is talking now, and I plan to devote hours to teaching her to quack. Speaking duck is one of the essential life skills that only a granddad can impart.

Please continue to stay safe and to wear your N-95 masks when out among others. As states, cities, schools and restaurants start to ditch mask mandates, don't be fooled by these political and commercial decisions. The numbers are just not there yet. They will be. At least I hope so. But not yet.

Love you all.

Dad