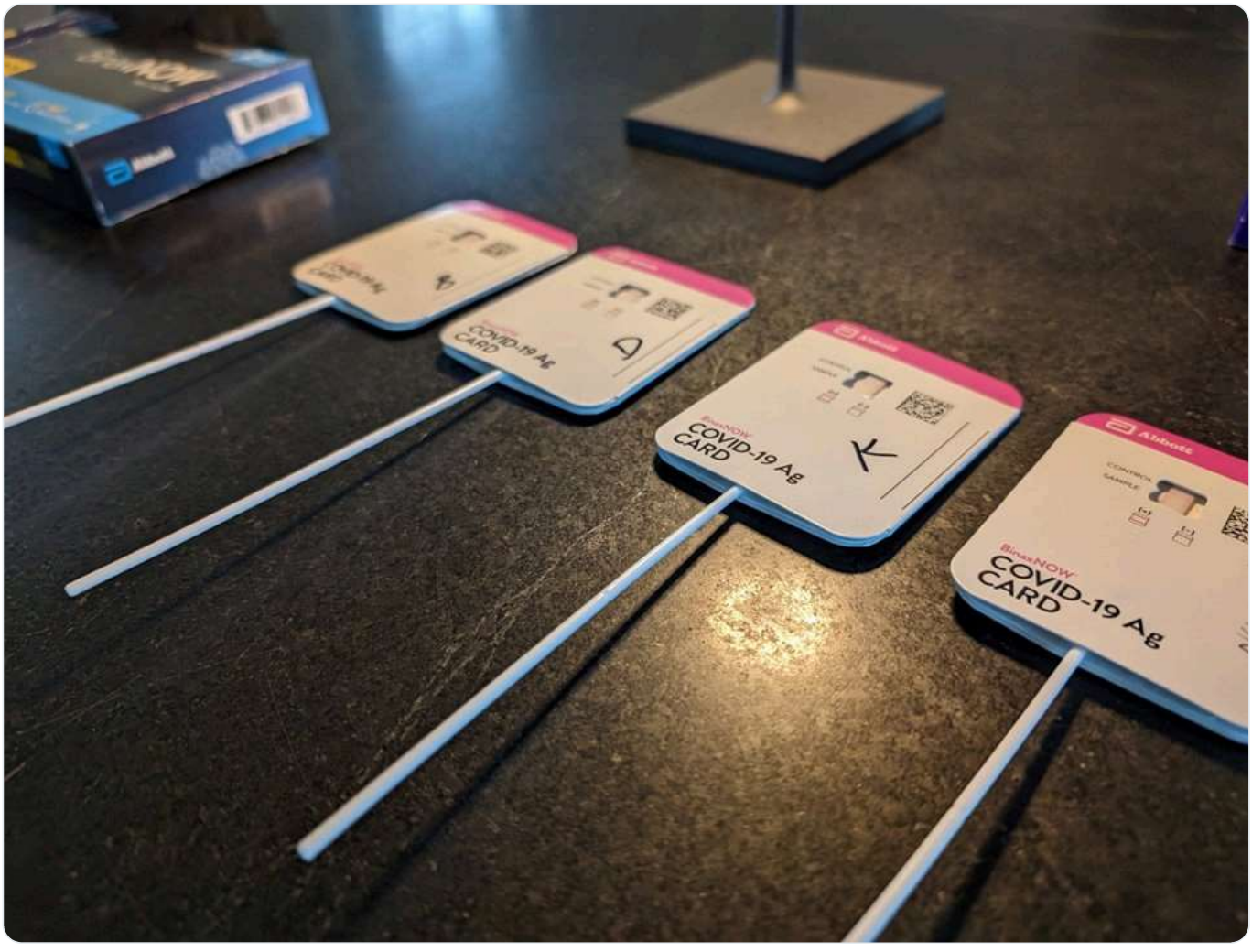
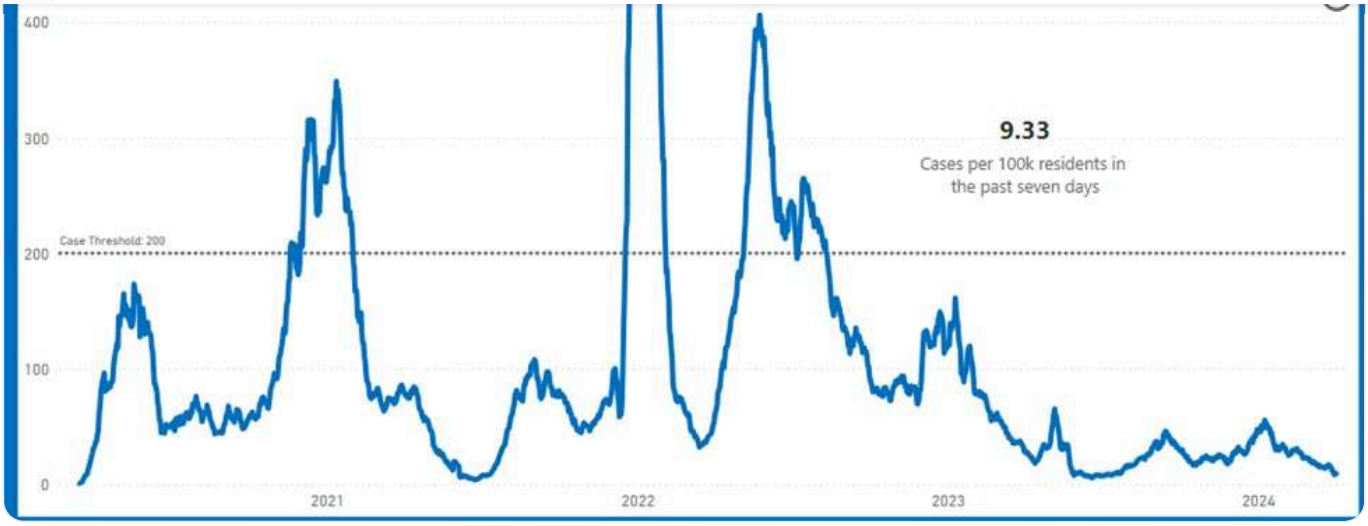
How our family stayed COVID-negative when my 2-year old was infected. An epidemiologists' perspective.



In late February, our toddler woke up with a runny nose. Anyone with a toddler will know runny noses are very typical. However, thanks to ongoing local surveillance (which I monitor ~weekly), I knew case rates were slightly elevated in our area, and that led me to test



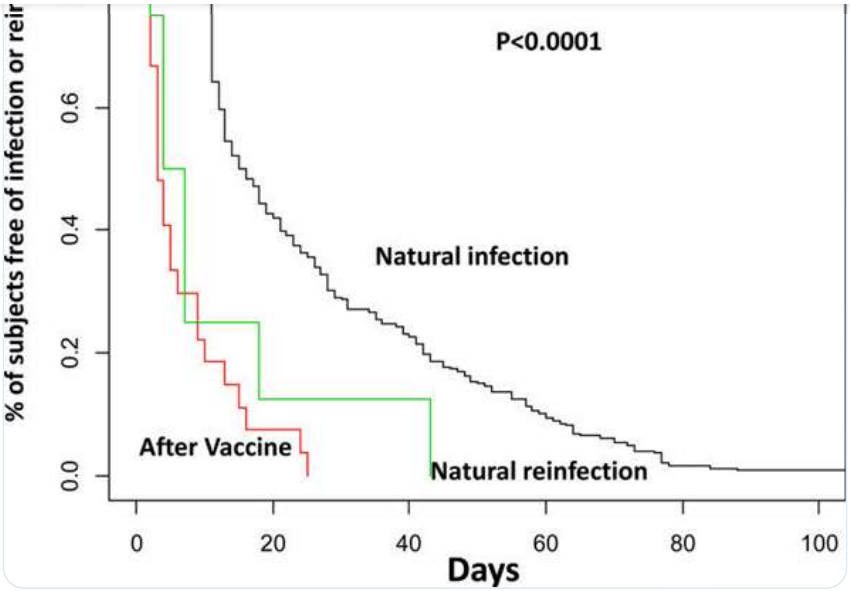
Lesson 1: If you know local circulation rates, you can adjust your threshold for when mild symptoms may warrant a test.
Lesson 2: We can get tests for free from our local library. This is a great resource that should remain widely available.

His first test came back with a very faint positive line. So faint, in fact, that I gave him another rapid test. Clear negative. Third was also a clear negative. Fourth (by which he was starting to get annoyed with me) finally confirmed the faint positive.

Lesson 3: Not all rapid tests are created equal. And sometimes those positives are truly faint. When in doubt, try another test. PCR is most sensitive but not as readily available. A positive rapid antigen means you are likely infected and infectious.

We were fortunate to catch this fairly early when he was slightly less infectious. Since he had primary COVID vaccination, which accelerates clearance and lowers viral load, I knew we'd have to "lock it down" for ~4-5 days to minimize transmission risk.

Lesson 4: Staying up to date with vaccines decreases transmission risk and shortens time to clearance when infected. I was also less worried about his well-being as vaccines reduce risk of long COVID and severe symptoms.
ncbi.nlm.nih.gov/pmc/articles/P...



https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8803178/

Risk Mitigation Strategy 1a: First thing we did was to open some windows. Improved ventilation is critical in reducing the amount of potentially aerosolized virus. We also had a small HEPA filter I placed outside his bedroom and left running.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9528801/

Strategy 1b: Anytime he went to the bathroom (#2), we would turn on the exhaust. We would also close the lid and leave the bathroom immediately after flushing. Toilet flushes aerosolize viral particles.

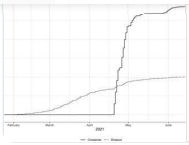
https://www.ajicjournal.org/article/S0196-6553(23)00820-9/fulltext#%20

Lesson 5: Increasing air circulation and filtration is critical in enclosed indoor environments, including bathrooms.

Strategy 2: Masks. My wife and I used high filtration masks, particularly during days 2-5 when he was coughing and more readily positive on his rapid antigen text. Both kids would also mask, especially when they were near each other (which we avoided).

Strategy 3: Although our son loves playing with his sister, we kept them in different rooms for ~5 days with limited interaction in our backyard. My wife and daughter ate meals first (to limit their exposure to aerosolized particles in the dining room) before my son and I ate.

I took primary care duty for my son, whereas my wife spent more time with our daughter. We figured it was better if only one of us got sick, instead of both.



Durability of Protection Against Coronavirus Disease 2019 (COVID-19) Through the Delta Surge for the NVX-CoV2373 ...

In the PREVENT-19 phase 3 trial, NVX-CoV2373 showed high initial efficacy against pre-Delta and Delta strains of COVID-19 with little evidence of waning fo

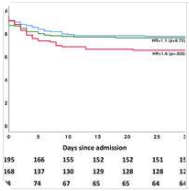
https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciae081/7610213

For myself as primary caregiver of a squirmy, coughing toddler, I knew I'd likely be exposed at some point during the infection course. My goal was to have a minimal viral load at first exposure, so as to allow my B cells time to ramp up and generate antibodies.

Most of the COVID vaccines induce robust B cell responses and humoral immunity, but immune responses take 2-3 days to fully kick in. By minimizing the initial exposure, you may provide your body time for a systemic immune response before the virus becomes systemic itself.

Some refs:

nature.com/articles/s4154...
science.org/doi/full/10.11...

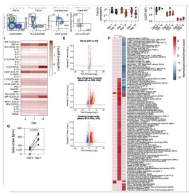


SARS-CoV-2 infection: Initial viral load (iVL) predicts severity of illness/outcome, and declining trend of iVL in hospitali...

Background Hospitalization of patients infected with the severe acute respiratory syndrome virus 2 (SARS-CoV-2) have remained considerable worldwide. Patients often develop severe complications and ha...

https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0255981

https://www.science.org/doi/full/10.1126/sciimmunol.adg7015



Three immunizations with Novavax's protein vaccines increase antibody breadth and provide durable protection from S...

https://www.nature.com/articles/s41541-024-00806-2

I give vaccines much credit for staying negative, as during one coughing-induced middle-of-the-night cry session a few days into his infection, I had forgotten my mask in my bedroom and only realized it after holding him for a few minutes.

I should add that we all tested daily. For my son to track his relative course – as predicted the test lit up around day 3, then quickly subsided and turned negative on day 5-6. We eased up on precautions around then, but maintained open windows and stayed outdoors when possible.

Lesson 6. Masking, ventilation, and staying up to date on your vaccines provides multi-layered protection against infection. If you are worried about vaccine side effects, the Novavax option is a traditional platform with fewer side effects.

Even mild COVID can result in long-term persistence in the body, multi-organ damage (e.g. brain and heart damage), and long COVID. The benefit of these relatively simple protective measures outweigh the inconvenience, especially in high-risk settings.
.heart.org/en/news/2024/0...

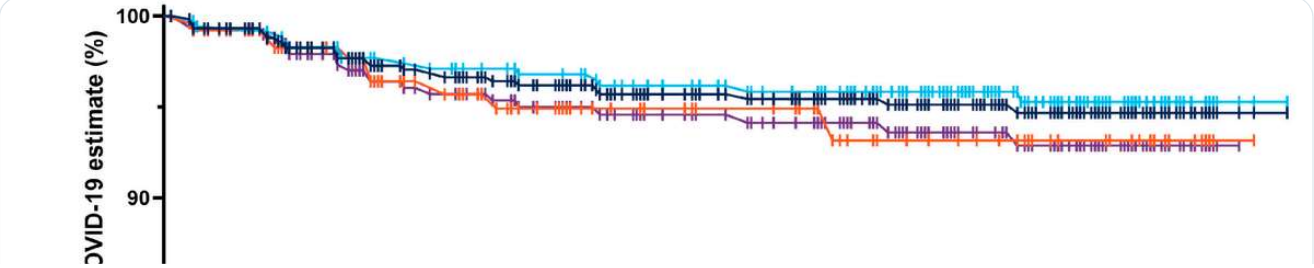
Finally, I should note that this is just our experience. There is a good deal of stochastic luck in who gets infected and who

More from @Daniel_E_Park

Daniel Park
@Daniel_E_Park

Apr 11

Small but helpful study of Novavax from Germany highlighting some of the key benefits of this vaccine option. Very low incidence of side effects among this high-risk population. And excellent long-term protection (95% at 10 months).

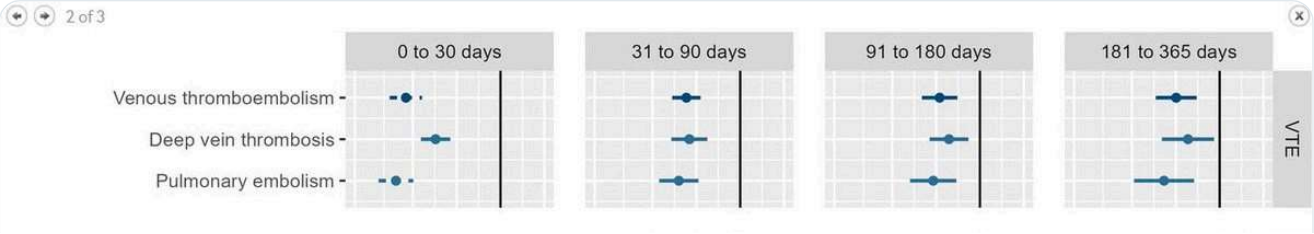


Read 4 tweets

Daniel Park
@Daniel_E_Park

Mar 13

Further evidence that COVID-19 vaccination protects you from poor cardiovascular outcomes, this time from a cohort of over 20 million people. Vaccinated individuals had at least half the risk of adverse outcomes w/in 30 days post-infection.
heart.bmj.com/content/early/...

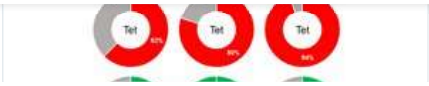


Read 7 tweets

Daniel Park
@Daniel_E_Park

Mar 8

Preprint: Immunity from mRNA vaccines wanes more rapidly due to inability to induce long lived plasma cells in bone marrow. This



Read 6 tweets

Daniel Park
@Daniel_E_Park

Mar 1

Interesting: different immune responses to Novavax & mRNA COVID vaccines. TLDR: NVX has higher proportion of the "best" IgGs (IgG3), while mRNA have higher of the "not always good" IgG4. IMO more importantly, NVX has stronger Fc-effector functions journalofinfection.com/article/S0163-...

Fc-effector functions have been hypothesized to be behind much of the efficacy w/ NVX. Ppl with essentially undetectable IgG still had >60% efficacy vs infection in the original trials. nature.com/articles/s4146...

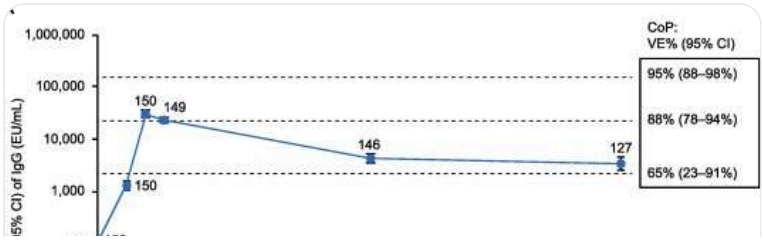
Side note, I think Dr. Lin is right on this one as well:

Read 10 tweets

Daniel Park
@Daniel_E_Park

Feb 26

Just released: Pretty remarkable 1-year durability data for Novavax 2-dose primary series. Though there is some expected waning, there was >65% efficacy at 1y (mRNA options typically wane to this level by ~4-5 months). Also fewer waning differences by age. sciencedirect.com/science/articl...



Read 4 tweets

Daniel Park
@Daniel_E_Park

Jan 11

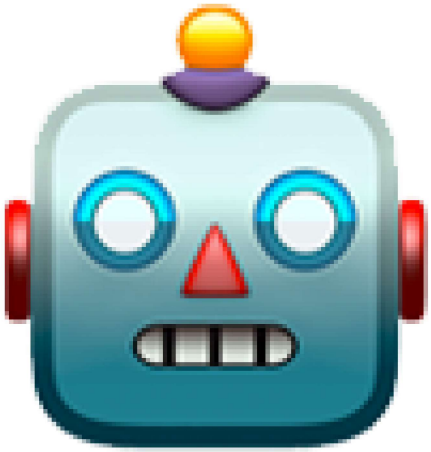
Preprint: saponin adjuvants (like the one in Novavax) shown to enhance durability (length) of protection compared with mRNA options. Potentially relevant as we shift to annual doses for COVID-19. biorxiv.org/content/10.110...

Additionally, in an NHP study, treatment groups receiving AS03-adjuvanted RBD-NP antigen vaccines had extended antibody titers and more durable Omicron variant protection when compared to values previously reported for commercial Pfizer-BioNTech and Moderna mRNA vaccines [25]. Nonetheless, antibody titers waned to pre-boost magnitudes by 6 months post-boost,

Sign the petition

CIWF

Ope



Did Thread Reader help you today?

Support us! We are indie developers!

This site is made by just two indie developers on a laptop doing marketing, support and development! Read more about the story.

Become a Premium Member ($3/month or $30/year) and get exclusive features!

Become Premium

Don't want to be a Premium member but still want to support us?

Make a small donation by buying us coffee ($5) or help with server cost ($10)

Donate via Paypal

Or Donate anonymously using crypto!

Ethereum

0xfe58350B80634f60Fa6Dc149a72b4DFbc17D341E copy

Bitcoin

Post Share