

THE ALCIVAX

Alcimed examines the intersections of travel policies and testing to help explain the complexities of getting back on the road.

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To Travel or Not to Travel

Some of the hardest decisions to make during a pandemic from both a public and person point of view concerns whether or not to travel. Some level of travel has resumed in most parts of globe, but making the decisions on if and when to go and what governments require isn't getting any easier.

Air Travel & Public Policy

The most complex policy decisions concerning travel are whether to allow movement over borders. Over the first 6 months of the pandemic, we have seen a general loosening of travel restrictions, from all out travel bans when many countries were experiencing their first waves, to the establishment of safe corridors for travel, referred to as travel bubbles, between countries who view each other as safe. Most countries that have reopened travel, still require quarantine for travelers arriving from countries with high infection rates. This allows for tourism to return and economic recovery for the sector.

Quarantine and Testing Rule Complexity

Countries can have complex rules which can change rapidly. Singapore for example requires sheltering at home from some countries and 14 day quarantine in government facilities for others. While at home, travelers must wear an ankle monitor to enforce the order and a negative test result is required to leave home. The test of course is at the traveler's expense.

These requirements can change quickly and make traveling even more stressful. A plane full of travelers from Nice to Oslo was forced to quarantine because their flight landed 1 min after Norway decided to place France back on the quarantine list. Many quarantine rules can be lifted however if the traveler has negative test results and some airlines won't let you board your flight without them. This is where the complexity starts. If you are inside the EU, you may now need a negative test to prevent self-quarantine even if you didn't leave the EU. If you are in the US, testing result delays have made it hard to travel to get results back before flights take off and have had to resort to using private testing labs which can layer on extra fees for rapid processing and even delivering results on the weekends. These unanticipated costs only add to the current level of travel stress.

Rapid Testing Assurance

To circumvent this, some airports, like SFO, in San Francisco, have started offering rapid testing labs, currently being used for airline and airport employees but could soon be expanded to travelers. Rapid testing sites have also been popping up in airports in Hong Kong and Japan.

Currently, airlines are requiring PCR tests prior to boarding, but the rapid testing labs are using antigen tests to get results in under 15 mins. These do require special analyzers. However, approval of Abbots credit card-sized test means antigen results can now be obtained in 5 mins with not special equipment. Tests are due to ship next month, still require a nasal swab, and will require a prescription to obtain them. While self-administered testing is taking off, the focus in this area is still on sample collection, like on college campuses, and has not yet moved on to self-interpretation to relieve the pressure on testing lab volume. Though Abbot's card size test may soon come with a mobile phone app that can analyze the results and display them on your phone.

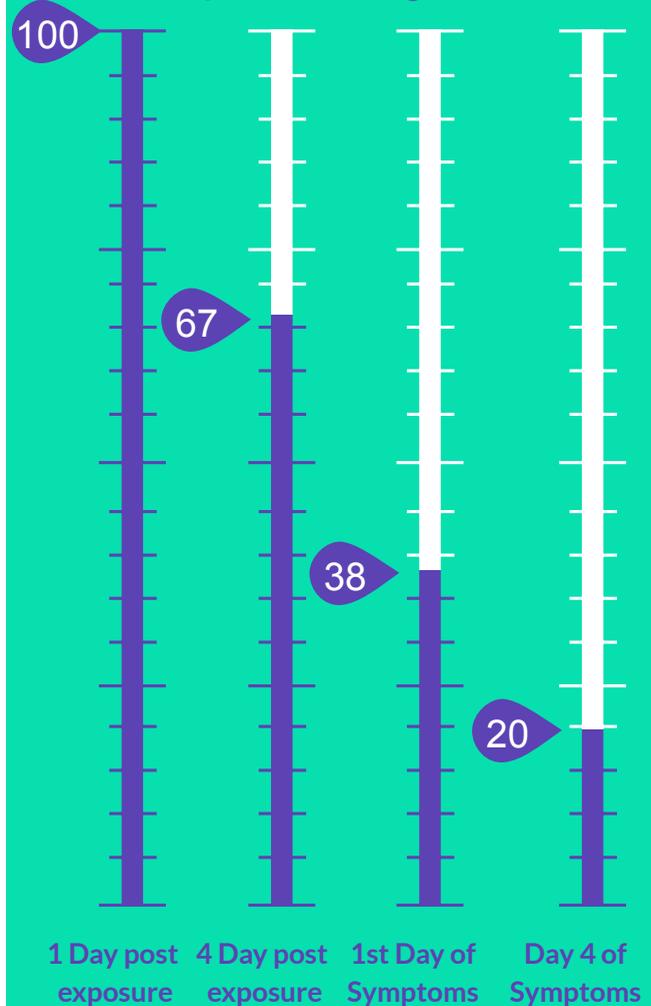
The Testing Timeline

Knowing that you need a test, doesn't solve the question about when to get tested. This requires some thought. The complexity of the answer goes beyond the normal worry about turn around time at the testing lab. It also has to do with how long it has been since you were exposed to the virus.

We have provided a handy time line to explain and help you make some of these decisions for yourself.

Time from Exposure to Positive Test

Probability of False Negative Result





The Vaccine Game

When vaccination turns political nobody wins. The release of the Russian vaccine without completing safety testing should have already given an indication of how the public will react, especially as speculation grows globally as to whether countries will force their residents to be vaccinated. Brazilian and American officials have tried to reassure their citizens that COVID vaccines will not be mandated by the State, though this won't prevent proof of immunization from being required for travel, school entry, or work in some industries.

Establishing high COVID vaccine coverage rates is going to be a large global challenge from available supply, distribution channels, to vaccine hesitancy. For example, almost 35% of Americans would not take an FDA approved COVID vaccine even if it were free. While vaccine hesitancy is typically restricted to the US and Europe, new evidence suggests that these ideas are spreading globally, which could have disastrous outcomes for the pandemic and beyond. What's driving the worst of the fear? A lack of transparency and the appearance of politically motivated accelerated vaccine approval.

While any vaccine approval is highly unlikely before the end of October, communications from the CDC to be prepared for distribution by the earliest possible Phase 3 read out time frame has sparked questions about safety and political motivation given the upcoming US elections. This increase in speed comes from the implementation of the pandemic vaccine development model, where production is started before trials end to speed

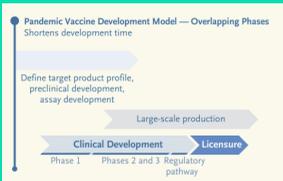


Image Source: [NEJM](#)

vaccine distribution. Pfizer CEO Bourla released a statement this week assuring Pfizer's commitment to not releasing a vaccine before it completes the normal clinical trial process. The head of operation warp speed has also promised to quit, if political pressure is applied. While the process will be fully completed, the compressed timeline does shorten the time available for adverse event monitoring pre-release.



Treatment Roundup

On the treatment front, remdesivir approval has been expanded to all hospitalized patients and the EU has begun to evaluate the use of dexamethasone in hopes of finding a cheaper alternative to using remdesivir. But none of the current treatments with emergency use approvals are capable of treating all COVID symptoms or patient populations. So what is coming up in the treatment pipeline?

- The NIH has begun trials to understand the effects of a remdesivir and interferon-beta 1A combination therapy for hospitalized COVID patients.
- Advancement of herbal remedies in Africa is ongoing with a Nigerian biotechnology professor experimenting with enhanced extractions from the *artemisia annua* plant, with anti-malarial properties, currently being touted in Madagascar. Efficacy of the herbal remedy is ongoing.
- In similar plant science, clinical trials have begun to see if THC is effective in dampening COVID induced cytokine storms.
- Trials to understand whether tranexamic acid can be used to block the ability of plasmin to cleave the SARS-CoV-2 spike protein are also underway. If successful the treatment could be used in an outpatient setting.
- Inhaled nitric oxide treatments to aid with breathing during infection are also underway.
- Regeneron's antibody cocktail has about a 60% chance of approval and project \$6 B in sales according to current projections.
- Meanwhile use of convalescent plasma, a well established technique, has become murky now that its use is being touted in political messaging.
- Finally, a nanoparticle vaccine against the spike protein has passed Phase 1/2 clinical trials as safe.



Inflamed Super Comp

The WHO confirmed this week that a major key to preventing COVID deaths is dampening down the immune system. Mortality from SARS-CoV-2 infection can be reduced by up 1/3 through the use of inexpensive anti-inflammatory steroids such as dexamethasone. These positive results have pushed the WHO to release new treatment guidelines for COVID.

The new guidelines are a powerful reminder that the COVID immune response is a double edged sword. You don't want to interfere when it's doing its job, but you want to calm it down before it has a full scale panic attack.

To find the right balance, the Summit super computer at the Oak Ridge National lab has been chewing on the 2.5 billion genetic combinations to sort out the answer. The results published in early July, launched the bradykinin hypothesis. Put simply, it's not the cytokine storm that kills you, it's the bradykinin storm that is making the blood vessels leaky, leading to inflammation and filling the lungs with a hydrogel from increased hyaluronic acid. In turn this renders the ventilator ineffective.

While we all ruminate on the consequences of COVID Jello lungs, we'll have to wait and see if any of the 10 proposed treatments make it or hold up in clinical trials.



All Joking Aside



Not quite ready to get on a plane or maybe you forgot your COVID test? No problem, illusionist David Blaine proves that first class flights might be inferior to your own balloon ride.

Cruising altitude for your next solo trip could be up to 25K feet, so enjoy your mask free travel. Oh wait you'll still need an oxygen mask. You can watch Blaine here.

Well we knew that coronaviruses liked to hang out in bats, but Batman! Production on the set of the new Batman movie has stopped because Robert Pattinson, who is playing Bruce Wayne has tested positive for COVID and been quarantined.

While a tad on the empty side, the Venice film festival



Image Credit: Getty

is turning mask wearing into an art, with this sting ray mask made for Tilda Swinton. And the Rolling Stones have sworn to never retire in the best news of 2020.

WHEN COVID ART TURNS PERSONAL: THE PANDEMIC TATTOO

Cleaning is not Child's Play.



Image Credit: [andresmakishi](#)

Documenting the Struggle



Image Credit: [lenapercyrosyfaict](#)

The New Icon of Virtue



Image Credit: [dr_vega_tattooer](#)

A Tale of Two Plagues



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