

THE ALCIVAX

Alcimed wonders whether the long haul back to normalcy from COVID-19 will cure the globe of the travel bug.

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Travel: An industry in Peril?

"Live with no excuses and travel with no regrets" ~ Oscar Wilde. Typically, we can't wait to be somewhere else, but travel during a pandemic is even uncomfortable than before, begging the question, will travel rates ever return to pre-pandemic levels and if not what happens to the industry?



We Are Not Returning to Normal for a While if Ever

The cruise industry has been at the forefront of the COVID-19 saga, with massive outbreaks on ships, with some economics professors suggesting that the cruise industry may not recover. To stay afloat, cruise lines are now heavily leveraged, using boats as collateral and allowing governments such as Saudi Arabia to take large equity stakes. At burn rates of \$900 M per month, it is hard to say how long they can hold on with no new income coming in.

Hotels may fare better than the cruise industry, with global occupancy rates bottoming out at 10% in mid-February clawing their way back to 25% by the end of April. Normalizing video conferencing during lock down, border closures, and social distancing policies will continue to depress international travel. Cash strapped, hotels will be restricted to basic maintenance and subject to intense room rate wars to attract what few customers there are. Private lodging like AirBnB will also increase in appeal given the higher level of privacy offered. Analysis suggests that European hotels may take as long as 2023 to fully recover, and even large asset heavy chains are at risk.



Airlines: At Risk, yet Flexible and Innovative

Experts are split on the future of the airline industry, British Air and Korean Air are in serious trouble. Warren Buffet sold off his \$4 B stake in US airlines and the CEO of Boeing predicts the failure of at least one major US carrier due to the pandemic. Despite these uncertainties, discount airlines like Ryan Air aren't ready to give up. The International Air Transport Association predicts a \$252 B industry short fall in 2020, with flights only 20-30% full and over 1 M flights having been canceled, forcing creative solutions to long term parking problems. 40% of travelers say they will hold off on travel at least 6 months.

Achieving safer flights could mean long screening times, possibly as long as 4 hours, due to temperature checks and disinfection protocols, coupled with contact less checking and bio-metric scans replacing passport validation. Non-fliers may be banned from entering the airport all together and food service on short-haul flights may be a thing of the past. Social distancing charges floated by Frontier Airlines have been abandoned after government outrage.

But innovation is surfacing. Germ Falcon can decontaminate a plane using UV light. Copper coatings may also create antimicrobial surfaces. Airplane seats are also getting a redesign, as Interspace tries to make current seats more comfortable. Middle seat disdain is growing in the time of COVID, Delta has promised to leave them empty for now, but Italian Avio Interiors has proposed flipping them around and installing transparent shield guards between the seats. Special travel suits are even being designed pre-fitted with masks to keep you comfortable and safe during your next long haul flight.



Interesting Trade-offs

More than 14,000 people have volunteered to be infected with COVID-19, to participate in controversial "human challenge trials" to accelerate vaccine development. London-based hVIVO and Switzerland-based SGS are working to launch challenge studies, and the WHO recently released a working document outlining criteria for an ethically acceptable design. The FDA has never allowed a human challenge trial for such a novel disease without a cure, but it isn't ruling one out. This is despite new analysis that people infected with COVID-19 die on average 10 years earlier than expected normally.

Speaking of trade offs would we be willing to trade the antibodies produced by the human body for infections with nano-antibodies produced by llamas? They may be more effective at protecting against contracting the virus but would require frequent follow up injects to maintain protection.

Does opening back require drastic measures, such as Wuhan's plan to test all of its 11 million residents over the course of 10 days, prioritizing older residents and densely-populated regions?

As countries are re-opening and surges of new infections are seen, Lebanon is re-instituting a broad lock down, while South Korea is only retracting the opening up of bars and clubs to block the source of new cases. Germany is re-locking down only small areas to contain localized outbreaks. On the flip side, India and Russia are proceeding with re-opening despite rising cases. Iran has both re-closed a whole province while still pushing to reopen schools next week.



[Click here to read Alcimed's full analysis](#)

Lockdown has drastically reduced emissions, but the funds used to pay for business bailouts may rob government coffers of the ability to pay for climate programs.



Treatment Progress

So far treatments have focused on the most critically ill patients, but peginterferon lambda-1a is now being tested in mild to moderately severe patients to see if disease progression can be slowed or stopped. Interferon addition to anti-viral cocktails can speed the rate of viral clearance.

Not everyone has adopted this strategy, the Netherlands approach has been to let the virus spread naturally, to develop herd immunity, calculated at 60% of the population. Blood banks are now conducting widespread testing to monitor the progress of herd immunity development. But it will be some time before we know the experimental outcome.

The COVID-19 survivor blood plasma market has exploded as researchers scan for additional potential treatments, while Regeneron has begun manufacturing a two potential antibody cocktails for clinical trials in June.

The EMA has extended the compassionate use of remdesivir to less severe patients, despite the NIAID stopping it's remdesivir trial before understanding whether it actually decreases mortality. Already approved in the US and Japan, Gilead is in licensing discussion with generic manufactures to increase production, but still hasn't fixed a price, though \$4,400 may prove cost-effective, depending on mortality.



Challenging Vaccine Frontiers

Even if a vaccine is successfully developed, countries around the world must evaluate their supply chains to determine if they are properly equipped to role out a national vaccination campaign. Meeting the overwhelming demand for a successful coronavirus vaccine will require a historic amount of coordination between scientists, drugmakers and the government. Even combining the 5 largest manufacturers, challenges in scaling up production and manufacturing capacity exist. Over 100 potential candidates can receive ACT Accelerator funding. The Lifeline pipeline will keep you up to date on all the recent developments.

Refining the COVID-19 Patient Pathway

The more cases of COVID-19 we see the more we refine the patient pathway by developing a risk score to maximize resources and direct treatment, using a set of criteria that typically indicate how sick COVID-19 patients will get:

- Large numbers of Covid-19 patients arrive at hospitals with blood-oxygen levels so low they should be unconscious or on the verge of organ failure. Instead they are awake, talking—not struggling to breathe.
- This has prompted doctors to look more closely at pulse oximetry, as a tool to identify patients with Covid-19 pneumonia earlier so that they can be treated before requiring a ventilator, which means they are already in dire condition.
- Instead of rushing to put patients on mechanical ventilators many doctors are changing their approach to care. While the low blood oxygen levels observed in coronavirus patients has prompted physicians to intubate patients sooner, less invasive methods of support such as CPAP and BiPAP machines are simpler approaches that may prove to be more successful methods of treating patients.
- COVID-19 patients require recovery periods of longer than a month, once released, with lingering fatigue and potential lasting kidney, heart, liver, and neurological damage, with no data yet on whether the morbidity is permanent.

Kids: A Missing Puzzle Piece

One COVID-related mystery has been replaced by another. Once we were puzzled as to why kids weren't getting sick as is typical of respiratory illness. Now we have to know why some are getting so sick.

Doctors have coined the mysterious illness "pediatric multisystem inflammatory syndrome" which is characterized by the following symptoms: persistent fever/inflammation, abnormal or sudden rapid heartbeat, rash, diarrhea, weak pulse and rapid breathing and dizziness/loss of consciousness. 80% of children with PMIS test positive for COVID and some are antibody positive suggesting that PMIS onset may be a delayed reaction to infection. PMIS is similar to Kawasaki disease, due to its inflammation of the blood vessels, especially coronary arteries. PMIS predominately occurs in boys that were otherwise very healthy, according to a Lancet study.

Children presenting with typical COVID pneumonia, requiring intensive care, overwhelming have pre-existing conditions, ~40% require ventilation.

Children may have lower infection rates, but have 3 times as many contacts as adults giving them as many opportunities to become infected. New studies also show kids may also carry as much or more virus than adults.



All Joking Aside

As people remain out of work, money is becoming tight, but don't worry bartering is back. The current exchange rate is a bunch of daffodils for a can of soda and while toilet paper exchanges almost evenly with dish-washing packets.

Zoom can now even provide babysitting. Virtual babysitting has become increasingly popular. The only drawback is the one hour limit per session. But if you can't find a babysitter you like, you can schedule some time for your kid to read to a therapy dog. Reading to dogs serves as good practice and eases the anxiety of reading aloud. Sadly the age limit is 6-10 years old.

Ever wonder what happened to all the sports casters? Well BBC's Andrew Cotter has applied his skills to bring you the the Australia's Phillip Island high stakes long-distance penguin parade.



And his twitter is full of the competition between his dogs Olive & Mabel, even their ZOOM prowess.

You can find all the Olive & Mabel antics on twitter: @misterandrewcotter

Street Art is already up to speed on the new normal.

Girl with a Pierced Eardrum



Banksy, Photo: Dan Mullan/Getty Images

Game Changer



Banksy, Photo: Andrew Matthews/PA/AP

Supper at Emmaus



Lionel Stanhope, Photo: Hannah McKay/Reuters

NHS Tribute



Lionel Stanhope, Photo: Simon Dawson/Reuters