

# THE ALCIVAX

**Alcimed** assesses COVID vaccines, from being the get back to normal solution, a new pharma investment priority, and an IP risk.

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## COVID Vaccines: Problems and Answers

"Those who have one foot in the canoe, and one foot in the boat, are going to fall into the river." - American Proverb. It would seem lately that the world is doing just that on COVID-19 vaccines. Doses have been delayed with manufacturing issues, causing vaccine schedules to be lengthened and increasing the likelihood of new variants arising in the population as we have seen recently in India. In a bold move, the EU has filed a second lawsuit against AstraZeneca for failing to deliver promised vaccine. The verdict of the 1st lawsuit is due out in June but it is currently unclear as to whether these legal actions will actually increase shipments. Novavax's promise of 1 B doses to the developing world has also announced a delay due to manufacturing issues. The developing world is now in dire straits as COVAX is 140 M doses short, as the Serum Institute of India hasn't made any of its vaccine shipments since March.

Seven COVAX countries in Africa and even India's neighbor Nepal have had to pause vaccination campaigns as they have run out of doses. India has also stopped exporting oxygen, further driving Nepal deeper into a COVID crisis. [GSK and Sanofi, did just release positive Phase 2 data on their retooled COVID vaccine](#), suggesting that players with large manufacturing capacity could still soon be entering the market in 2021.



## COVID Vaccine Ancillary Services

On the other side of the world, the vaccine has been an economic opportunity for non-vaccine players. The U.S. tourist industry has gotten a large bump from vaccine tourism, as many Latin Americans unable to get vaccines at home are flying to the U.S. for the privilege. [U.S. Embassies have allowed that vaccines can be considered medical treatments](#), clearing the way for this wave of travel.

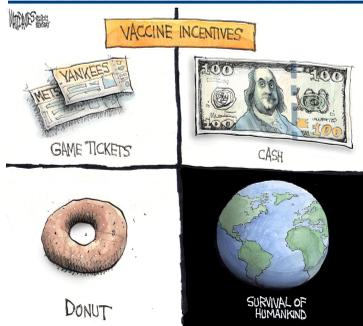


Image Credit: [Newsday](#)

With almost 50% of the US vaccinated with at least one dose, it is proof that some of the vaccine incentives, free donuts, baseball tickets, and cash have increased the urge to get appointments. It is unclear, however, if the remaining 50% will be motivated by the [updated CDC guidelines stating that fully vaccinated persons, 2 weeks after their 2nd dose can return to a largely mask free life](#). While the new CDC guidelines are entirely in line with the science, [experts fear that it may be too soon and create confusing messages on mask wearing in general](#).

The other major hurdle to the vaccine effort is the unwillingness to get vaccinated. The [U.S. spring surge of coronavirus cases driven by the unvaccinated](#) as can be seen in the higher number of COVID cases in younger populations. Additionally, the [anti-vax movement is largely using anti-vaccine sentiments to drive up consumer spending in natural remedies and supplements](#), with the profit motive making it hard to discourage spreading vaccine misinformation.

Real world evidence will prove out the need of vaccines that work. Much like AstraZeneca, Sinopharm vaccine has struggled to show high efficacy in practice. The [Seychelles have largely vaccinated their entire population](#), but 1/3 of new COVID cases are coming from people who are fully vaccinated, suggesting that the Sinopharm vaccine may be less efficacious in the real world than thought. The high efficacy of other COVID vaccines however, have raised some interested questions about [if and when boosters will really be necessary](#).

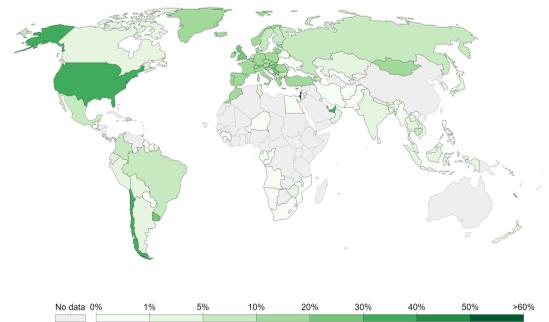


## The COVID Vaccine Race In Graphs

The world is currently only 4.6% fully vaccinated with wide variations between countries.

Share of the population fully vaccinated against COVID-19, May 15, 2021

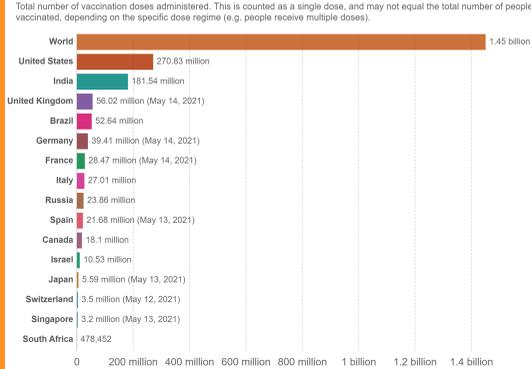
Share of the total population that have received all doses prescribed by the vaccination protocol. This data is only available for countries which report the breakdown of doses administered by first and second doses.



There have been enough total doses administered for 1 dose for over 18% of the world's population.

### COVID-19 vaccine doses administered, May 15, 2021

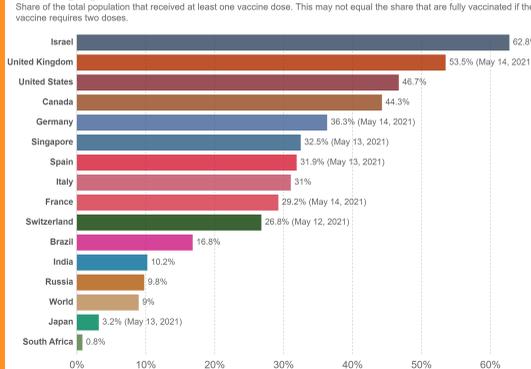
Total number of vaccination doses administered. This is counted as a single dose, and may not equal the total number of people vaccinated, depending on the specific dose regime (e.g. people receive multiple doses).



The UK, US, and Canada are rapidly approaching similarly high levels of vaccination as Israel.

### Share of people who received at least one dose of COVID-19 vaccine, May 15, 2021

Share of the total population that received at least one vaccine dose. This may not equal the share that are fully vaccinated if the vaccine requires two doses.



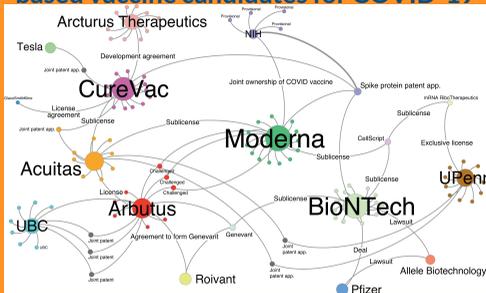
# The Bright Vaccine Market Future

The COVID-19 crisis and the stunning success of rapidly developed mRNA vaccines has stirred a renewed interest in vaccine investment. Prior to the pandemic, Merck, GSK, Sanofi, and Pfizer were considered the only real players in a field with a high manufacturing capacity entry bar. But Moderna has successfully delivered a highly efficacious vaccine with a projected 2022 production capacity of 3 B doses and \$1.7 B in revenue on the books for Q1 2021. Thus disruption is not only possible but profitable. This disruption is likely to lead to a new found interest in developing preventions for a larger number of indications rather than only looking at treatments.

## The COVID Vaccine Patent War

What seems to be jeopardizing the new energy in the vaccine market is the potential for a vaccine patent waiver, currently up for discussion at the WTO. Originally suggested by India and South Africa, it gained even more attention last week, when it got US backing, with U.S. Trade Representative Katherine Tai proclaiming that pharma companies had the chance to be heroes if they would be willing to share the intellectual property around their novel vaccine technologies. From the U.S. perspective, getting the U.S. economy back on track without getting the global economy back on track is an impossible task. Vaccine patent waivers though cause concern that it could lead the way towards other waivers such as patents on treatments.

### Patent network analysis of mRNA-based vaccine candidates for COVID-19



which the U.S. is not endorsing at this time. With U.S. inflation racking up a 13 year high, the already stressed U.S. economy certainly would benefit from a return to normal trade. A patent network analysis, published in Nature Biotech, suggests that the current mRNA vaccines have a complex web of intellectual property that will not be easily untangled by patent waivers. More to come.

Image Credit: Nature Biotechnology

## Learning from our Mistakes

The WHO has released a report entitled "COVID-19: Make It the Last Pandemic". The goal of the report is to understand how a more effective global health response to pandemics could be put into place in based on the global shortcomings identified in the early response to the COVID-19 crisis in 2020. The panel's goal is to seek a more empowered WHO capable of investigating new outbreaks without delay and rapidly publishing their findings. This can be accomplished with a "new surveillance-and-alert system that is based on transparency and allows WHO to publish information immediately," according to committee co-chair Ellen Johnson Sirleaf.

The report findings and proposals will be debated on May 24th at the WHO's annual assembly of it's 194 member states. In connection with the panel's review the WHO has pulled together an interactive timeline to show the actions taken in response to the global pandemic. The key takeaways of the report are follows:

- The first cases of COVID-19 were reported in December of 2019 and the WHO was impeded in their efforts to investigate by the Chinese government.
- The 8 day delay between the WHO Emergency Committee meeting on January 22nd and the declaration of an international health emergency. cost crucial time.
  - Thus February 2020 was lost in terms of preparation.
  - The WHO also failed to endorse travel bans and governments were slow to heed the warning.
  - Perhaps the greatest failure was the "winner-takes-all" push for protective equipment and medicines rather than preparing hospitals for the coming onslaught of COVID patients.



Image Credit: Chappatte

# Passports & EU Travel

The EU is almost a week into testing a pan-European travel pass to allow freer movement between the EU states by summer. The pass would not only cover those who have been vaccinated but would also extend to those with proof of recovery from COVID-19 or negative test results.

The travel passes will not be required for travel but are meant to help to overcome the patchwork of travel related restrictions in place over the last year of the pandemic. If final negotiations go smoothly the travel passes may be in place as early as June 21st.

The remaining negotiations in the way of the travel pass approval include approving the list of allowed vaccines and tests used to validate the current COVID-19 status of the passenger. On the vaccine front, the EU must decide whether all vaccines should be considered or just the vaccines already approved by the EMA. Similarly, the EU must decide whether rapid antigen tests in addition to PCR tests should be included, recognizing that speed is being favored in place of efficacy.

EU officials have stressed that it is not a vaccine passport, but as vaccine rates in Europe increase, European countries are looking forward to an influx of tourist cash into the economy. A website meant to aid travels on deciding their travel plans, called Re-open EU, will let travels input their itineraries and browse through current travel requirements.



## All joking aside

What goes up must come down. That rule now includes Everest climbers bringing their oxygen canisters back down the mountain with them instead of leaving them on the mountain. There is an estimated 3000 oxygen canisters currently on the mountain. Perhaps this will solve two crisis in one go, the desperate need of oxygen for COVID patients in Nepal as well as the environmental damage done to the mountain when the canisters are left behind.

The International Olympic Committee (IOC) has announced that they are confident that the Summer Olympics will be ready for opening ceremonies by July 23rd. Almost 70% of the 10,500 athletes expected to compete in the games have already qualified for the games. Despite the games postponement from last summer, recent surveys of the Japanese population suggest that the Japanese people are not enthusiastic hosts, with 60-65% of people surveyed preferring to postpone the games again. Japan is still under a state of emergency and more than 300K people have signed a petition to cancel the games.

## COVID Variant Evolution: A cartoon guide

### A World Full of Variants



Image Credit: Blue Mountain Eagle

### The Uphill Battle



Image Credit: Luo Jie

### The Denial Variant



Image Credit: Springercreative.com

### The coming variants



Image Credit: Rick McGee

