

THE ALCIVAX

Alcimed focuses in on the need for cross-government and cross-industry efforts to bring the whole world a vaccine.

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COVID: Tackling the Global Supply Chain

"If a tree falls in a forest and no one is around to hear it, does it make a sound?" - or perhaps in COVID times "If a COVID vaccine is approved but there is no one around to give it to, does it provide protection?"

So far and appropriately most of the efforts to vaccinate the world against COVID have been on answering questions around how to design a vaccine, predicting whether or not it will be effective, and ramping up for clinical trials. But as several front line candidates near the end of Phase 3 testing, it is time to consider the more important challenge. **How do you run a global vaccination campaign?** This is not a novel challenge as we have eradicated smallpox and polio through these types of campaigns, but those campaigns took years or even decades. With COVID, we don't have that kind of time.

Condensing the vaccination timeline will take a massive cross-government and cross-industry effort. Here are the elements we are already seeing across the vaccine's journey to the general population.

The 5 Steps in a Vaccine's Journey

**R&D**
Vaccine Design &
Pre-clinical Testing

The [Access to COVID-19 Tools \(ACT\) Accelerator](#) has drastically speed up the sharing of information for the development of both vaccines and treatments thanks to the WHO, Gates Foundation, Wellcome Trust, and the World Bank to name a few.

**Approval**
Human Trials &
Safety Review

The [COVID-19 Prevention Trials Network \(COVPN\)](#) and BARDA are accelerating clinical trials as part of Operation Warp Speed through consolidation of clinical trial networks and funding, and the [EU is launching a new biomedical research agency, modeled after BARDA in the US](#) to keep up.

**Manufacture**
Ramping up to full scale production
to make vaccine for 7.5 B people

Much of the acceleration of vaccine production comes from [COVAX, sponsored by Coalition for Epidemic Preparedness Innovations \(CEPI\), the WHO, and GAVI](#) to manufacture 9 candidate vaccines prior to approval for local distribution, massively expanding public-private partnerships in pharma.

**Purchasing**
Pre-ordering of vaccine
National & International
Collaboration

Most rich nations have pre-negotiated with vaccine makers for their doses and GAVI is hoping to help the rest of the world through the [COVAX Advance Market Commitment \(AMC\)](#). The World Bank is looking to provide the financing with a [\\$12 B proposal](#).

**Distribution**
Shipping, Inventory Management,
Patient Management

Quite frankly, this is the elephant in the room. Plans to conduct population wide vaccine campaigns are still only being defined now in anticipation of a first wide spread release in spring or summer of 2021.



Ready Vaccine One

While ongoing, here is a recap of the progress made on [distribution of any COVID vaccine as soon as it is ready for launch](#):

64% of the world's population is due to receive access to a COVID vaccine through COVAX. The [WHO has just released its distribution plan](#).

Phase 1

Each country will receive enough vaccine for frontline workers (3% of total) with additional vaccine shipments to cover a max of 20% of the population targeted at the people most at risk for COVID.

Phase 2

Where vaccine is sent in Phase 2 will be determined by where the virus is spreading, where other viruses may be spreading, like the flu and measles, and which healthcare systems are most vulnerable.

The [plan is not without criticism](#) and will need to be adjusted based on which vaccine technology is approved first, so shipping logistics, like a cold chain (Pfizer's vaccine may even need to be shipped frozen), can be accommodated.



Public-Private Logistics

The US HHS announced this week the details of its own vaccine distribution plan which gives some insights into how to get the final mile to the patient. The largest hurdle is the shipping of the vaccine nationwide while refrigerated or frozen. For this, the [US will be partnering with McKesson, the medical supply distributor that handled the 2009 H1N1 flu pandemic](#), and testing the limits of FEDEX's cold chain capacities. The [HHS/FEDEX partnership, Project Airbridge](#) begun at the beginning of the year to distribute PPE and other medical supplies.

At the last stage, [Salesforce is releasing Work.com for Vaccines](#) to aid governments in campaign management, including inventory management, appointment management, clinical administration, outcome monitoring and public outreach.



The Vaccine Race Final Laps

There has been good and bad news for COVID vaccines in the last two weeks.

Let's start with the bad news:

Trials for Innovio's vaccine candidate have been placed on partial clinical hold by the US FDA while it answers questions about the trial and delivery device being used. Innovio's stock price is currently down 39%.

The FDA is also widening the safety review of AstraZeneca's vaccine after a UK trial participant developed transverse myelitis, to review the outcome of other vaccines developed by the same group. Clinical trials for AstraZeneca have already resumed in the UK, Brazil, India, and South Africa.

Now the good news:

New data released from the Moderna vaccine trials show effective T helper cell involvement in all patients using a higher dose, which also seems to be effective in the elderly.

Side effects for both the Moderna and Pfizer assets appear to be mild and include exhaustion, fever, and headaches, but no serious neurological issues like those seen in the AstraZeneca patient.

A second Russian vaccine is nearing approval having not completed a full set of clinical trials, but no one knows yet whether that is good or bad news.



The Search for Treatments Continues

Positive movement on the treatment front this week largely comes from two potential neutralizing antibodies by Regeneron and Eli Lilly.

The Regeneron antibody cocktail is effective at reducing viral load and symptoms in non-hospitalized COVID patients. The effects are particularly striking in patients that failed to mount their own effective immune response.

Eli Lilly's neutralizing antibody reduces rates of hospitalization in addition to reducing viral load and increasing viral clearance.



Contact Tracing & Spread

Thanks to a massive contact tracing effort in India, we now have fresh insights into how COVID spreads to help us more successively prevent new waves of infection. Over 500K people in India were traced, to create this insights into viral spread:

- "Superspreading events are the rule rather than the exception when one is looking at the spread of COVID-19, both in India and likely in all affected places."
- Numerically, that translates to 8% of patients being responsible for 60% of new infections, with 71% of patients spreading the infection to no one at all.
- If you are low-risk for COVID, the probability of contracting the virus is 4.7%.
- If you are high-risk for COVID, the probability of contracting the virus is 10.7%.
- In household transmission rates are 3 times higher than community transmission.
- People are more likely to contract the virus from someone their own age. "Kids are very efficient transmitters in this setting, which is something that hasn't been firmly established in previous studies."
- In resource-limited settings, the average time from hospitalization to death is reduced from 2 weeks to 6 days.
- The median age range for mortality also shifts from 60+, as seen in the US, to 40-69 year olds in these resource-limited settings, mostly likely to be infected/die.



Elite Safety Precautions

The global pandemic is the ultimate test of resilience, as it lays bare many of the weak points in any system, from the global supply chain to COVID outcomes in populations with larger economic inequality. There have been some real success stories, such as industrial pivots to meet the needs of the moment, to Africa's coordinated COVID response when expected to fail.

But the extreme safety precautions implemented by society's elite are now coming to light and asking some interesting questions. Elon Musk announced this week that he and his family would not be getting a COVID vaccine when ready, because they are simply not at risk. But this has prompted some hard questions about how at risk his auto worker are. Similarly, if you would like to speak to Vladimir Putin, you have to quarantine for two weeks first and pass through a disinfectant tunnel. But why is Russia failing to contain the spread of COVID in the general population?

In China, government officials and some corporate executives have been vaccinated with one of the two Chinese vaccines in late stage trials prior to approval. But should they be considered essential workers and get to skip the line?



All Joking Aside

COVID has officially ruined swimming. Researchers from the University of Minnesota have detected SARS-CoV2 in lake water, presumably shed by swimmers, DO NOT PANIC. There is no reason to believe the lake is now infectious.



At fashion week in Paris, a climate change protester crashed the Dior show holding a protest sign to raise awareness about the pollution caused by the fashion industry, but most people thought she was just part of the show.

Image Credit: AFP

Song parody artist Weird Al Yankovic thinks it may actually be time to PANIC in his new song "We're ALL Doomed". But don't worry it's not because of the coronavirus, but instead the inability of two grown men to have an actual debate.



Image Credit: Rolling Stone

Protest Signs in the Era of COVID

Death to Zoom



Image Credit: dudewithsign

A Full Social Calendar



Image Credit: dudewithsign

Even King Kong is Relaxed

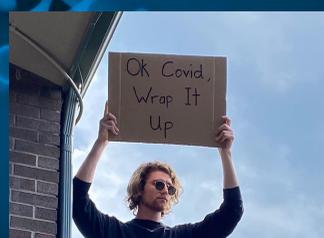


Image Credit: dudewithsign

Everyone is Ready to Travel



Image Credit: dudewithsign