

THE ALCIVAX

Alcimed ponders why we worried about vaccine distribution logistics, instead of asking harder questions about supply chains.

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Predicting the End of the Pandemic

As COVID-19 vaccine campaigns begin ramping up globally, it is possible to start thinking about when we might transition to a post-pandemic state. Since the roll out has lagged more than people expected, the delay in vaccinating the 70% - 85% of the population will also allow the pandemic to linger. This has two major consequences. The longer the pandemic lingers, the larger the pandemic's economic toll will be and the more likely that variants will continue to arise that may complicate vaccination efforts. Therefore, the clock is ticking and only a third of countries have started their campaigns.

So what are the current predictions about when the pandemic will end?

 **Israel: will achieve 75% vaccinated in 2 months**

 **America: will reach 75% vaccinated by 2022**

 **Canada: could take 10 years at current rate**

As the current demand for COVID vaccines largely out paces supply, one of the major levers to ramp up vaccine efforts is the approval of new vaccines. Data for three new vaccines is available paving the way for granting them emergency use authorizations.

NOVAVAX

- Protein nanoparticle vaccine
- 2 doses, 3 weeks apart
- Ships refrigerated

Johnson & Johnson

- Adenovirus vector vaccine
- 1 dose
- Ships refrigerated

THE GAMALEYA NATIONAL CENTER OF EPIDEMIOLOGY AND MICROBIOLOGY

- Adenovirus vector vaccine
- 2 doses, 4 weeks apart
- Ships at -18 degrees C

 **89%**

 **45,000 participants**

 **Elderly data not yet reported**

 **Prevents symptomatic infection**

 **UK: 85% effective
SA: >60% effective**

 **\$16 per dose**

66%

70,000 participants

66% effective in the elderly

Prevents symptomatic infection

SA: >60% effective

\$10 per dose

92%

40,000 participants

91% effective in the elderly

Prevents symptomatic infection

Awaiting data

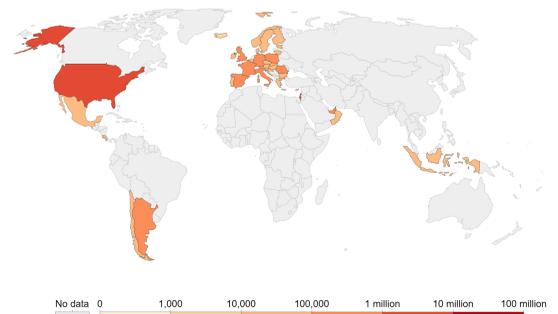
\$10 per dose



The COVID Vaccine Race In Graphs

We are done when the whole world is blue.

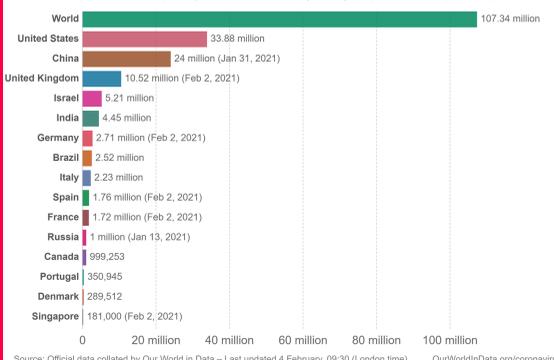
Number of people fully vaccinated against COVID-19, Feb 3, 2021
Total number of people who received all doses prescribed by the vaccination protocol. This data is only available for countries which report the breakdown of doses administered by first and second doses.



In the last two weeks, ~67M doses have been administered bringing the total to 107M.

COVID-19 vaccine doses administered, Feb 3, 2021

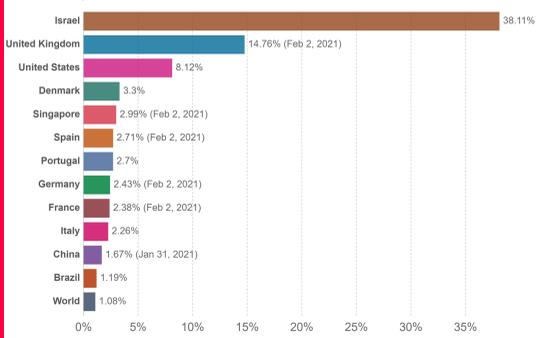
Total number of vaccination doses administered. This is counted as a single dose, and may not equal the total number of people vaccinated, depending on the specific dose regime (e.g. people receive multiple doses).



Israel remains world leader in vaccinating people but Singapore's campaign now looks in full swing.

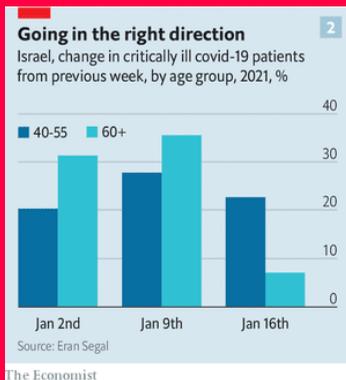
Share of people who received at least one dose of COVID-19 vaccine, Feb 3, 2021

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.



Vaccination does work

Israel having already given over 38% of its population at one dose of the Pfizer vaccine and are on pace to reach 70% of their population having received both doses in the next 2 months. This is already having a large impact on the COVID cases in Israel.



Israel's vaccination campaign skews heavily toward vaccinating the elderly first. The impact of even first dose vaccinations in the elderly can already be seen. The first two weeks of January saw 30%+ increases in the number of severe COVID cases in the 60+ age group, but that has dropped to just 7% new severe cases as Israel reached 40% of the 60+ age group having received their first dose. In the younger age group where less vaccination the number of severe COVID cases continues to increase weekly by at least 20% highlighting the need to vaccinate as many people as possible as quickly as possible.



Manufacturing Collaboration

To aid in the effort to rapidly increase the supply of COVID vaccine, an unprecedented level of collaboration is being seen between major pharma players on manufacturing COVID-19 doses. This adds to the increased collaboration seen in the vaccine development phase largely coordinated by the Vaccine Collaboration Hub.

Pfizer had already cut its 2020 manufacturing projections by half after having sourcing issues, but has also been delivering less than promised volumes in 2021 as they attempt to optimize the manufacturing process.

Yet help is on the way! Sanofi will make 125 M doses of the Pfizer vaccine in 2021, which will be manufactured in Frankfurt and only distributed in the EU. Novartis will also be producing Pfizer vaccine by the Q2 in Switzerland, though volumes have not been disclosed. Additionally, Pfizer and Moderna are easing supply chain concerns by increasing the number of doses included in each vial. CureVac, a third mRNA COVID vaccine, is getting development and manufacturing support from both GSK and Bayer which will greatly aid the launch of the CureVac COVID vaccine once approved.

When the vaccines don't arrive:

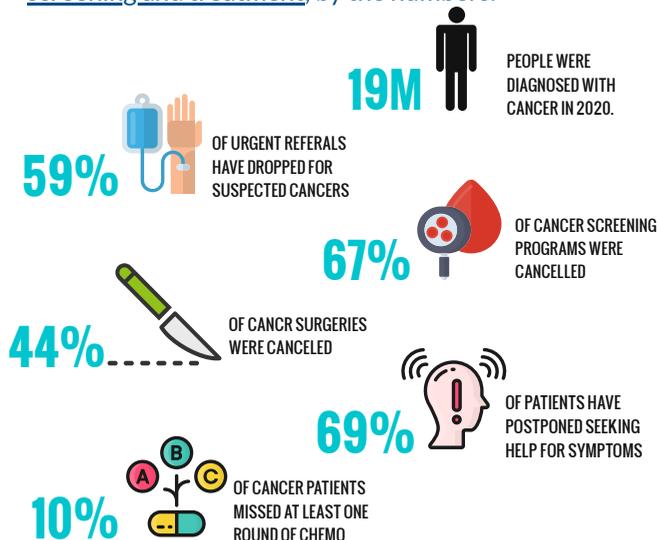
As manufactures adjust manufacturing projections, the shift has been felt most profoundly by African countries that worry that cold chain logistics and COVAX setbacks will potentially leave the continent without a reliable vaccine supply. But they aren't sitting idly by:

- The African Union (AU) has 55 members and hopes to see 60% of the continent vaccinated in the next three years. They would need vaccinate 780M people to accomplish this.
- Therefore the AU, similar to the EU, has offered a collective COVID vaccine buying program. The AU has secured up to 670M doses to date.
- 16 AU member states should receive a collective total 114 M doses of COVID vaccine in the next few weeks to kick off mass vaccination in African in earnest.
- In order to distribute mRNA vaccines that need cold-chain storage, drone vaccine delivery may be the answer. A California based company, Zipline, already operating in Ghana and Rwanda is exploring offering to take last mile vaccine delivery to the skies.
- Nigeria has put together a deal for Zipline to deliver 1 M doses of vaccine.
- Zipline is still exploring how to maintain the cold-chain storage from end to end.
- Zipline also offers medical drone delivery in the US and could ease logistical issues getting vaccine to rural areas.

World Cancer Day

Feb 4th every year is World Cancer Day, to raise awareness in the fight against cancer. A year into the pandemic, the European Parliament has done a full analysis of the impact COVID and the lockdown's to control it on the success of cancer treatments.

Here are some of the major impacts on cancer screening and treatment, by the numbers.



All Joking Aside



Image: Getty Images

For those of us who live in countries still struggling to contain the pandemic, the Flaming Lips have wowed fans in space bubbles. There are two more shows planned in March if you can actually get to Oklahoma City. Each bubble comes with water, a speaker, and a fan.

Before COVID, we used to pack stadiums to listen to our favorite bands, but can any of us can actually remember the last time we rocked out with 22K fellow fans? Except this was in New Zealand about a week ago. With only one COVID case outside of quarantine it would seem New Zealand is back to normal.



Image Credit: NBC News

A couple of laughs in your search for the elusive COVID vaccine

Patience is a virtue

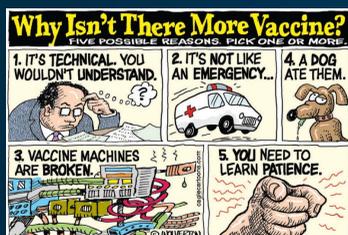


Image Credit: Monte Wolverton

Pandemic Essential Items



Image Credit: Marshall Ramsey

The only small things in Canada



Image Credit: Malcom Mayes

Vaccine Scheduling Woes



Image Credit: Nathaniel Archer