Are (we) winning yet, son?

Take a look at how the world is beating COVID-19 with vaccinations in emojis 🔥💦💯.

🏁 Which vaccines are available right now?

As the worldwide lockdowns hit last March 2020, an international effort to minimize COVID-19 deaths and induce herd immunity began. Here are the nine finishers to-date:

Covaxin
Storage temp.: −25°C to −15°C
Manufacturers: USA & India

Oxford/Astrazeneca
Storage temp.: >0°C
Manufacturers: UK, US & India

EpiVacCorona
Storage temp.: >0°C
Manufacturer: Russia

Sinovac
Storage temp.: >0°C
Manufacturer: China

Johnson&Johnson
Storage temp.: 2-8°C, −20°C
Manufacturer: USA

Sinopharm
Storage temp.: 2-8°C
Manufacturer: China

Sputnik V
Storage temp.: <0°C
Manufacturer: Russia

Moderna
Storage temp.: −20°C
Manufacturer: USA

Pfizer/BioNTech
Storage temp.: −25°C to −15°C
Manufacturer: USA

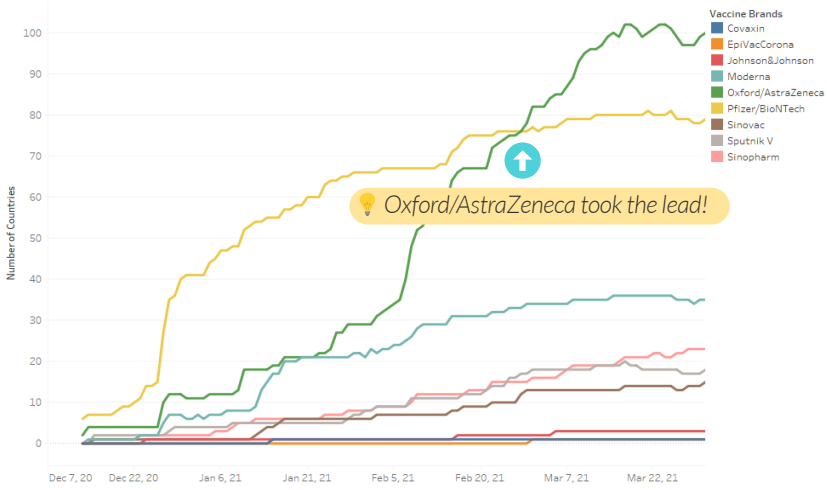
Legend: 💉 - # of doses

❄️ below freezing temperature = ✈️ harder to transport

*A small population from the United Arab Emirates needed a third dose for sufficient immune response

👌 Which vaccines are getting picked up?

The graph below shows the number of countries using each vaccine brand over time.



🥇 Pfizer/BioNTech's Comirnaty was the first COVID-19 vaccine to be approved for Emergency Use Listing by the World Health Organization (WHO) in December 2020.

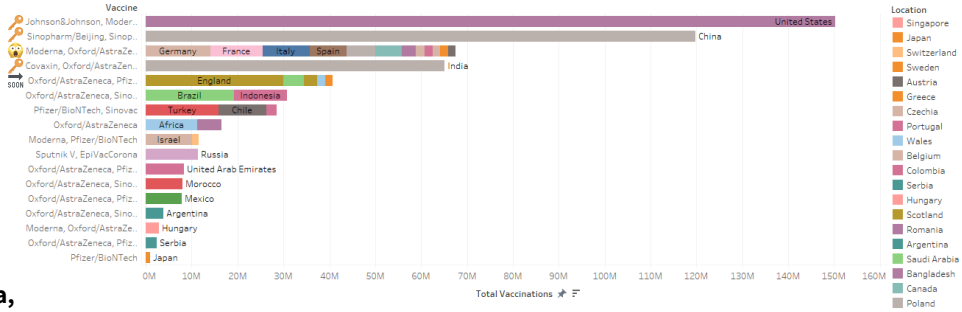
🌤️ With an efficacy rate of 91.3%, Comirnaty was quickly imported by multiple countries in what seemed like the first light at the end of the tunnel.

😬 However, due to Comirnaty's below-freezing storage requirement, Oxford/Astrazeneca's Vaxzevria took the lead.

🙌 With a refrigerator-temperature storage requirement and multiple manufacturers, it became one of the easiest vaccines to import and the most accessible COVID-19 vaccine brand to date!

😎 Which brands are the ~~cool kids~~ leading countries using?

The graph below shows the vaccine brands of the top 40 countries in total vaccinations per million for inoculations performed on March 31, 2021 - the latest date with full data available.



Note: For unlabeled countries, the corresponding colors are shown at the 'Location' legend.

🔑 The United States, China and India, the top three vaccinators for March 31, 2021 use vaccines produced in their own territory.

USA: Johnson & Johnson, Moderna, and Pfizer/BioNTech
China: Sinovac and Sinopharm
India: Covaxin and Oxford/AstraZeneca

Hence, self-sufficiency is key!

😱 Next in the list is the combination '**Moderna, Oxford/AstraZeneca, Pfizer/BioNTech**.'

The countries which use them are Western European (**Germany**, **France**, **Italy**, ...) and North American (**Canada**).

These are the closest countries to the respective manufacturers of the listed vaccines.

➡️ SOON The same can be said of the combination '**Oxford/AstraZeneca, Pfizer/BioNTech**' which leading countries from Western Europe also use. One possible reason for this phenomenon is the ease of logistics towards neighbouring countries.

Hence, moving forward, an effort should be made to decentralize vaccine production - making brands equally accessible for all countries.

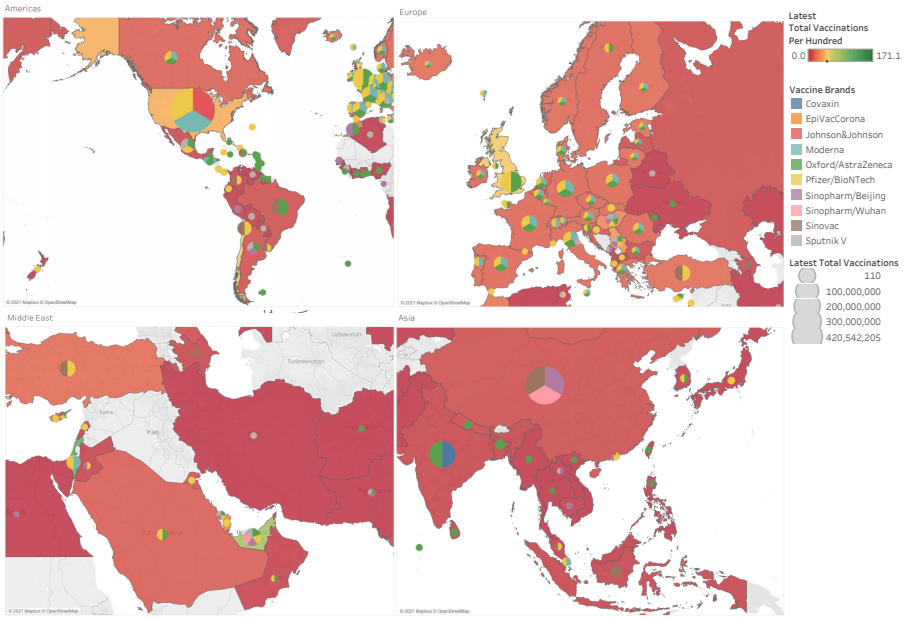
we ain't done yet tho ⏭️

Are (we) winning yet, son?

Take a look at how the world is beating COVID-19 with vaccinations in emojis 🔥💦💯.

🌐 How is the world scaling up?

The graph below shows the brands used by each country in a pie chart scaled to total vaccinations.
It is superimposed on the heatmap of total vaccinations per hundred, a proxy for vaccination progress.



🏘️ As stated earlier, the trend of Western Europe and North America vaccinating more people may be due to the disparity in demand as manufacturers focus on their home turf.

💉 However, an trend seems to arise between the number of brands and total vaccinations per hundred: Countries with more vaccine brands (multi-colored pie charts) are less red than single-brand countries (one-color pie charts).

😱 Therefore, one possible way to increase vaccination in Asia and the Middle East (save for the UAE - having five brands and glowing green), generally red areas, is to increase the number of vaccine available to them.

🗣️ The illusion of choice: the psychology of giving jabs

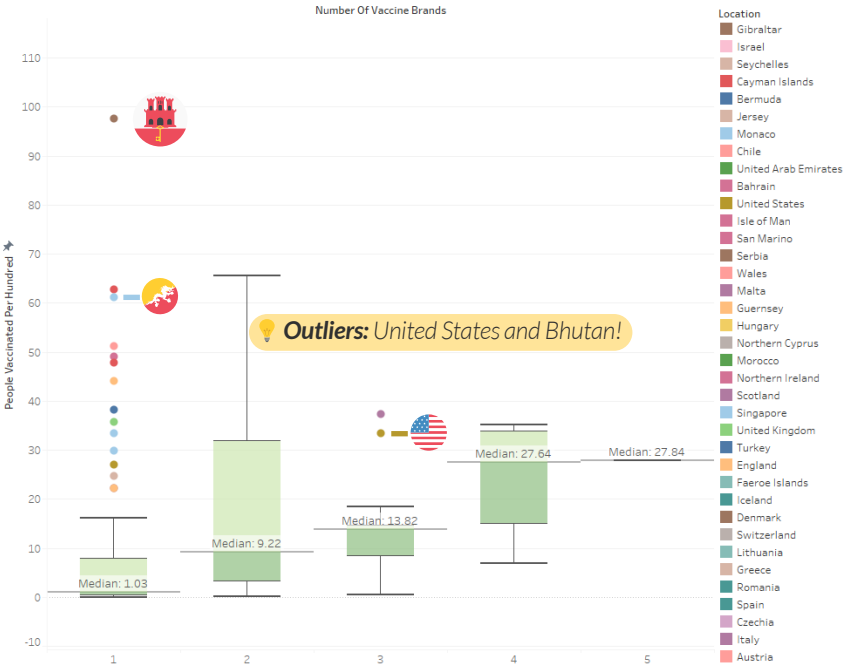
The graph below plots the number of vaccine brands to people vaccinated per hundred of each country.
Outliers are shown as dots while the remaining countries are fitted inside the boxplot.

📈 As probed by the earlier graph, the median number of people vaccinated per hundred increases as the number of brands also increases. Such phenomenon may be a result of external factors like supply chain fluctuations and political reasons in choosing a vaccine brand to begin with.

👤 However, one internal factor that may be studied upon closer is the individual preferences of citizens for their vaccines.

🏝️ What is apparent in the graph, however, is the prevalence of small island/archipelagic countries with only one brand of vaccine but a lot of people vaccinated per hundred.

🏰 This may be due to small-sized orders which can cover the entire country's population such as Gibraltar's cumulative 63,671 doses which allowed 88.1% of its citizens to be fully vaccinated against COVID-19.



💡 The presence of the United States as an outlier may be explained by the number of local vaccine manufacturers the country has, along with its steady supply of AstraZeneca jabs.

Since the 2020 elections, vaccination has been one of the top priorities of the U.S. government, as one of newly-elected President Biden's campaign promises.

📜 Bhutan, however, has a much richer narrative behind it.

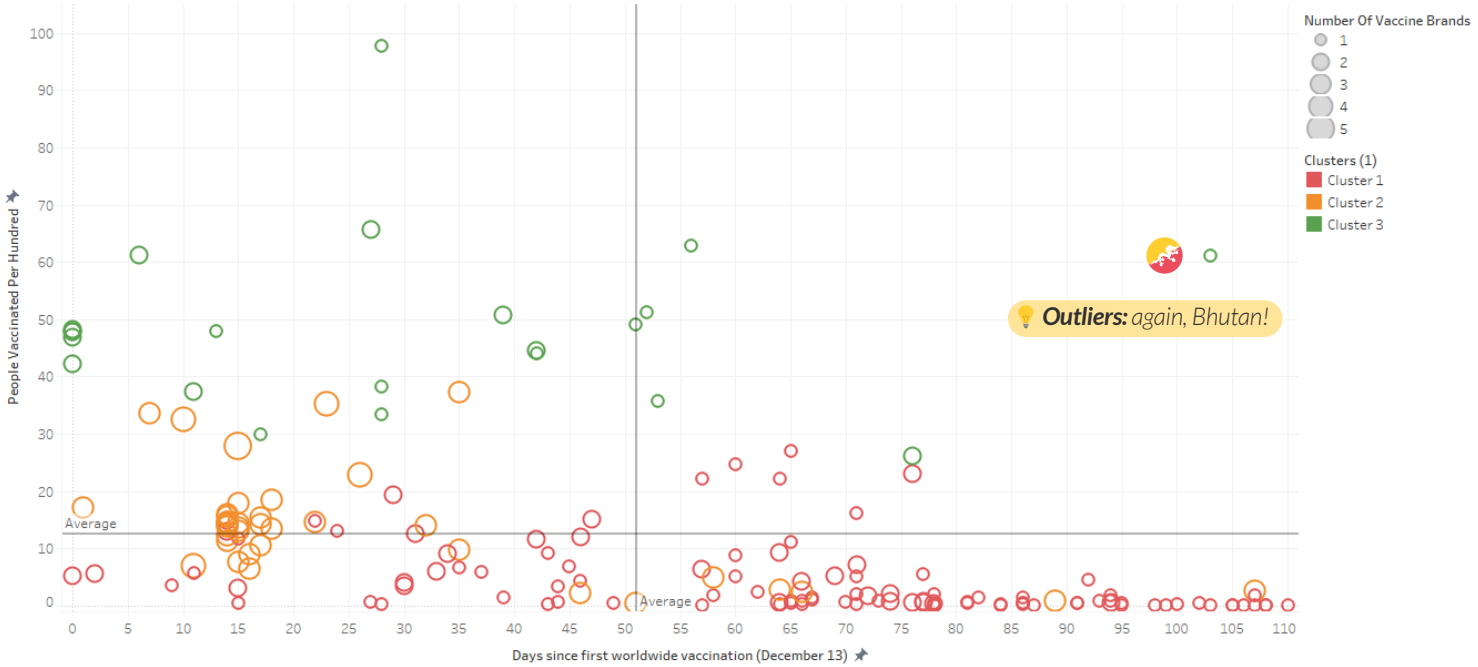
one last page ⏭

Are (we) winning yet, son?

Take a look at how the world is beating COVID-19 with vaccinations in emojis 🔥💦💯.

🌐 'Early Jab Gets the KO?': The future of COVID-19 vaccinations

The graph below shows a scatterplot of countries according to people vaccinated per hundred and days since first worldwide vaccination. Each data point is scaled by the number of vaccine brands the country currently uses.



But first, what's up with Bhutan?

🔮 ***Bhutan received its first doses in January 2021***

However, due to Buddhist superstitions, the jabs were administered last March 27 to coincide with an important religious day. It is, after all, the last Buddhist kingdom in the Himalayas.

⚛️ ***How'd they scale up in so few weeks though?***

Desuups — heroes in orange who undergo routine quarantine away from their families. They are the citizen arm volunteers of the country who greatly aided in the country's COVID response thus far, from the transport of goods to the coordination of various local offices.

While waiting for the appointed date, they strengthened sign-ups and readied vaccination sites and procedures to inoculate as many as possible, once possible.

📈 ***And it paid off! They are currently one of the leading countries in people vaccinated per hundred worldwide.***

⏩ Moving forward: the path we must take

1 💰 As seen in the graph above, countries which deployed vaccination efforts earlier do have an advantage in terms of inoculating everyone.

However, it must be noted that having the resources to reserve and arrange for early high-end vaccine brands (e.g. Pfizer/BioNTech) is advantage enough.

2 🌐 Aside from having the capital to secure jabs for their people, richer countries tend to be producers themselves: supplying their own country as needed and having the agency to choose where to export their vaccines.

Hence efforts need to be focused on making these vaccines available to <u>all nations</u> through decentralized production.

3 🏭 The COVAX facility which aims to provide poorer nations with equal access to vaccines is an example of this. However, it is still greatly limited by the manufacturing aspect.

Therefore, steps must also be taken to decentralize these vaccine manufacturing plants to regions where there is little to no access.

4 ‼️ The COVID-19 vaccines need not be released unpatented, but companies who do supply these goods must be socially-responsible enough to allow certain regions to produce these for themselves.

Building new manufacturing locations in vaccine-scarce regions such as Africa or the Pacific may boost the number of doses available worldwide, employ local workers & help ailing economies, and benefit the manufacturers by increased revenue!

⬅ END