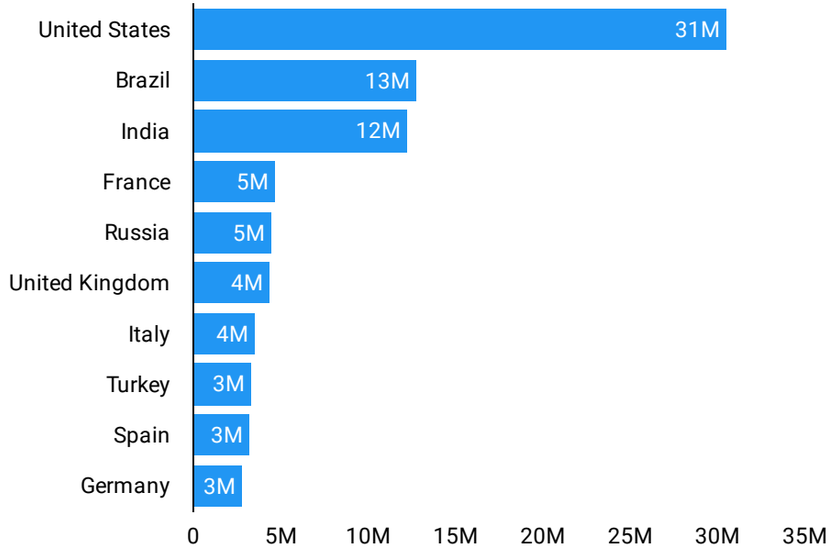
# The Covid-19 Vaccination Race

The COVID-19 dataset used in this analysis is a collection of the data maintained by "Our World in Data". It includes up-to-date information on confirmed covid cases, deaths, hospitalizations, testing, and vaccinations as well as other variables of interest such as poverty index, GDP and Human development Index. Metadata and other detailed information of the data set can be found in the github link - https://github.com/owid/covid-19-data/tree/master/public/data.

We explore the key variables of the data set as part of the analysis below and analyse the disparity in the vaccination rates between the developed and the developing world.

| population | Covid Cases | Mortality | Vaccinated ( 1+ doses) | Fully Vaccinated | Vaccinated - Poor Nations |
|---|---|---|---|---|---|
| 8B | 130M | 3M | 617M | 135M | 1M |

**Countries with highest number of covid cases**



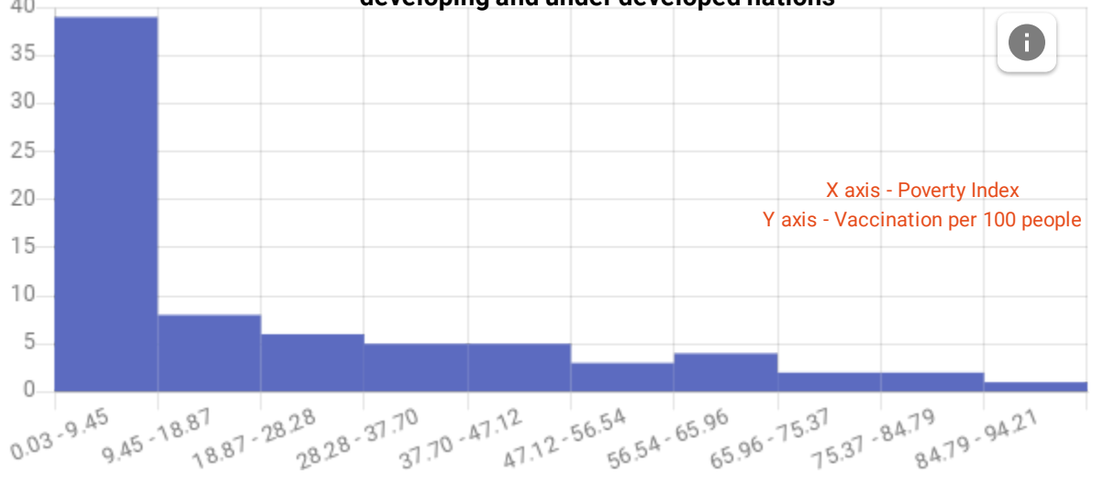

**Vaccination rate by country**

| Location | Poverty Index | Vaccinated 1+ dose | Fully Vaccinat... | % Population |
|---|---|---|---|---|
| United States | 1.2 | 100M | 56.1M | 29.77 |
| India | 21.2 | 59M | 9.6M | 4.29 |
| United Kingd... | 0.2 | 31M | 4.5M | 45.88 |
| Brazil | 3.4 | 15M | 5.1M | 7.05 |
| Germany | null | 10M | 4.2M | 11.48 |
| Turkey | 0.2 | 9M | 6.9M | 10.92 |
| France | null | 9M | 2.9M | 12.53 |
| Indonesia | 5.7 | 8M | 3.9M | 3.06 |
| Italy | 2 | 7M | 3.3M | 11.93 |
| Russia | 0.1 | 7M | 4.5M | 4.91 |

**% Population vaccinated by Poverty Index**

| Poverty Index | People Vaccinated per 100 |
|---|---|
| 1.1 | 65 |
| 0.5 | 61 |
| 1.5 | 55 |
| 0.2 | 46 |
| 1.3 | 36 |
| 1.2 | 30 |
| 0.1 | 19 |
| 0.7 | 13 |

**Privileged nations have higher rate of vaccination as compared to the developing and under developed nations**



## Stakeholders and the Big Idea

To control the virus, enough doses of covid vaccine needs to be produced to cater to every geography. Around the world, close to 3 million lives have already been lost to Covid and many countries are battling shortages of medical equipment and vaccines. Rich nations like UK and Canada have procured vaccine doses more than 3-5 times the size of their population. Leaving India, China and Russia who are manufacturing their own vaccines, most of the other nations leading the vaccination race are privileged ones.

All the vaccine producers have benefited from billions of dollars from subsidies, yet hold the monopoly rights to produce and profit from them. Serum institute India is the only pharma company producing vaccines for 92 of the poorest nations in the world. Would waiving off the pharma patents temporarily give access to other manufactures in the world to produce vaccines at a global scale? The world cannot eliminate the pandemic if only a handful of nations are vaccinated. Through this analysis, we want to raise awareness of the disparity in the vaccinations between the rich and poor nations and request the World Health Organisation(WHO) and the World Trade Organisation(WTO) to intervene and take necessary steps to ensure every citizen of the world gets a fair share.

| Location | Population | Total Cases | Vaccinated |
|---|---|---|---|
| Zambia | 18M | 88K | |
| Uganda | 46M | 41K | 64K |
| Togo | 8M | 10K | 42K |
| Timor | 1M | 534 | |
| Tanzania | 60M | 507 | |
| Solomon Islands | 687K | 17 | |
| Sierra Leone | 8M | 4K | 20K |
| Senegal | 17M | 39K | 252K |
| Sao Tome and Principe | 219K | 2K | 9K |
| Rwanda | 13M | 22K | 352K |

* Nations with Poverty index > = 25

Total Doses - Globally
617M

Vaccinated - Poor Nations
1M

Of the 10 poorest nations in the world, 6 of them haven't had a single shot of vaccinations yet.

Only a million vaccine doses have been administered so far amongst the poorest of nations mainly in Africa in comparison to 617 million doses worldwide with the vast majority being developed nations

In the above example, I choose to use a pivot heatmap/bar to show the low rate of vaccinations amongst the poorest nations in the world. I have used color saturation in the heat map to represent the population. I have also used scorecards to show the vast disparity in the vaccination rates amongst the developed and the poorest of nations. And to show the stark constrast in the vaccination rates, I have used a simple text summary

In the next section, we will look at how the visualisation can be improved to communicate the message more clearly

## Improved Visuals

In the previous visual, the combination of heat map and bar in the pivot was cluttered and not easily readable. The text visual summarised the data but failed to capture the audience's attention.

In the heat map below, the color cues and saturation highlights the important data points and captures the readers attention by reducing the cognitive overload.
The text summary uses size and color preattentive attributes to direct the audience attention to the information being presented.

| Location | Population | Total Cases | Vaccinated |
|---|---|---|---|
| Rwanda | 13M | 22K | 352K |
| Senegal | 17M | 39K | 252K |
| Malawi | 19M | 33K | 127K |
| Kenya | 54M | 132K | 121K |
| Uganda | 46M | 41K | 64K |
| Mozambique | 31M | 67K | 46K |
| Togo | 8M | 10K | 42K |
| Cote d'Ivoire | 26M | 43K | 35K |
| Guinea | 13M | 20K | 30K |
| Sierra Leone | 8M | 4K | 20K |

* Nations with Poverty index > = 25

Total Doses - Globally
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Vaccinated - Poor Nations
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