BI: Tableau Project - Covid Data Exploration

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Most Important Question

Decision maker: WHO Scientists & Directors

Decisions to make:
1. **Which countries should we aid in Covid Prevention and Covid Treatment?**
2. **Which countries should we help against aging problem?**
3. **Which vaccination should we use?**

Note: All data are from Kaggle and Google DatasetSearch, it is apparently that the data is not reflecting the real scenario, but since the resource is trusted, all conclusions are made upon the data we have.
Since there is almost no Data for Africa, this region is excluded.

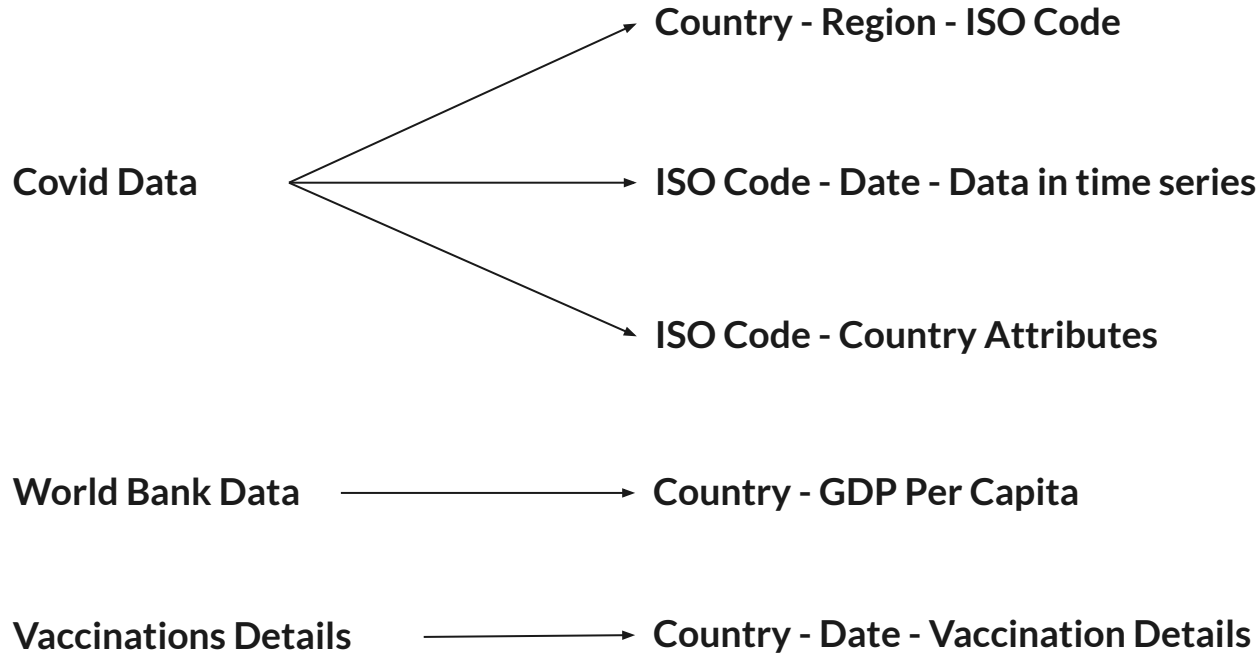# Agenda

01

Data Cleaning

02

Visualizations

03

Conclusions

1. Data Cleaning

Files

Covid Data → Country - Region - ISO Code

Covid Data → ISO Code - Date - Data in time series

Covid Data → ISO Code - Country Attributes

World Bank Data → Country - GDP Per Capita

Vaccinations Details → Country - Date - Vaccination Details

Fill NaN Values

Handle Missing Values

2. Visualizations

|	High in Deaths / Total Cases	High in Deaths / Population
Meaning	Low level of Hospital Resource or Lacking Medical Supplies	Low level of Disease Prevention

1.1 Deaths / Total Cases

Deaths / Population > 0.12%
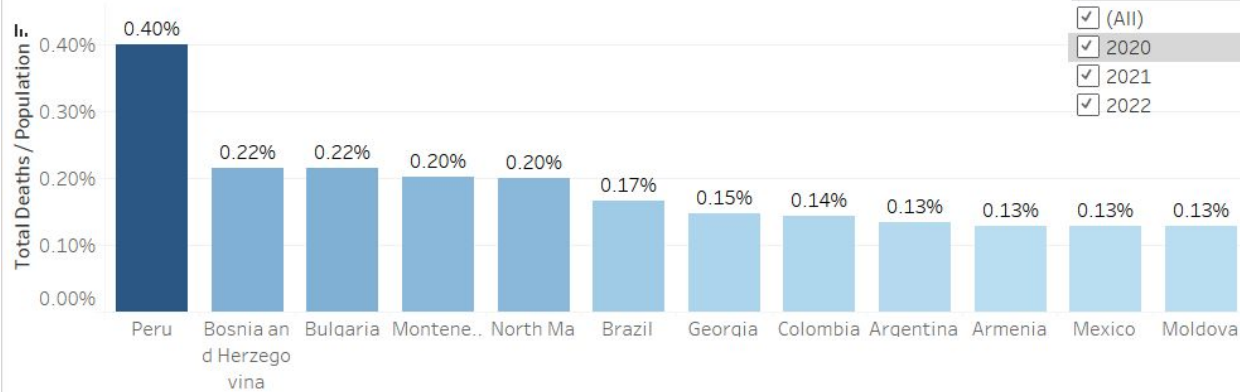
Number of Deaths / Population signifies the level of Covid Prevention.

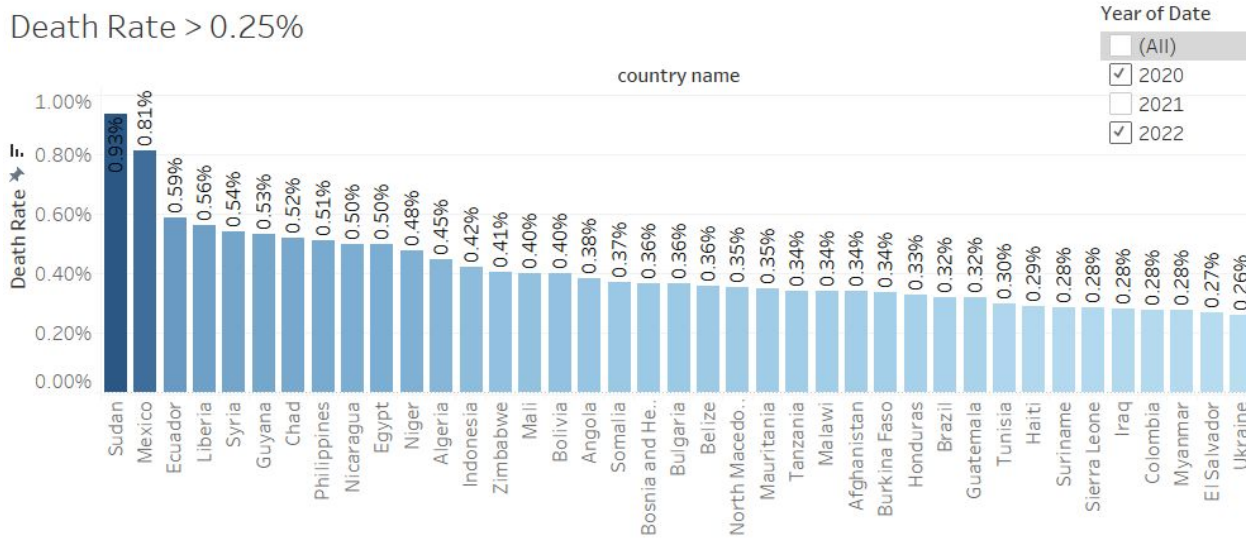1. **GDP Per Capita lower than Poverty Line**
2. **Ratio over 0.12%.**

WHO directors should promote better Covid Prevention methods for these countries.
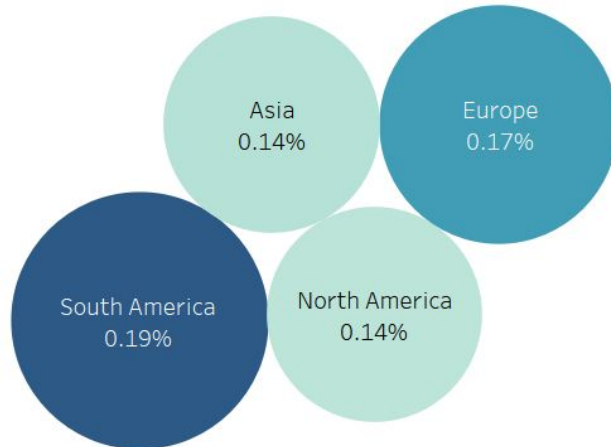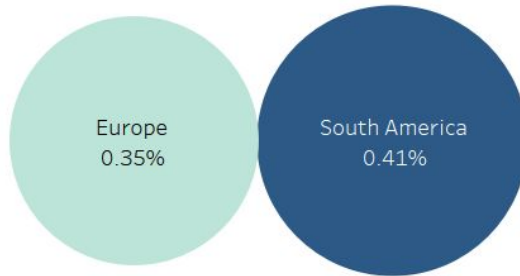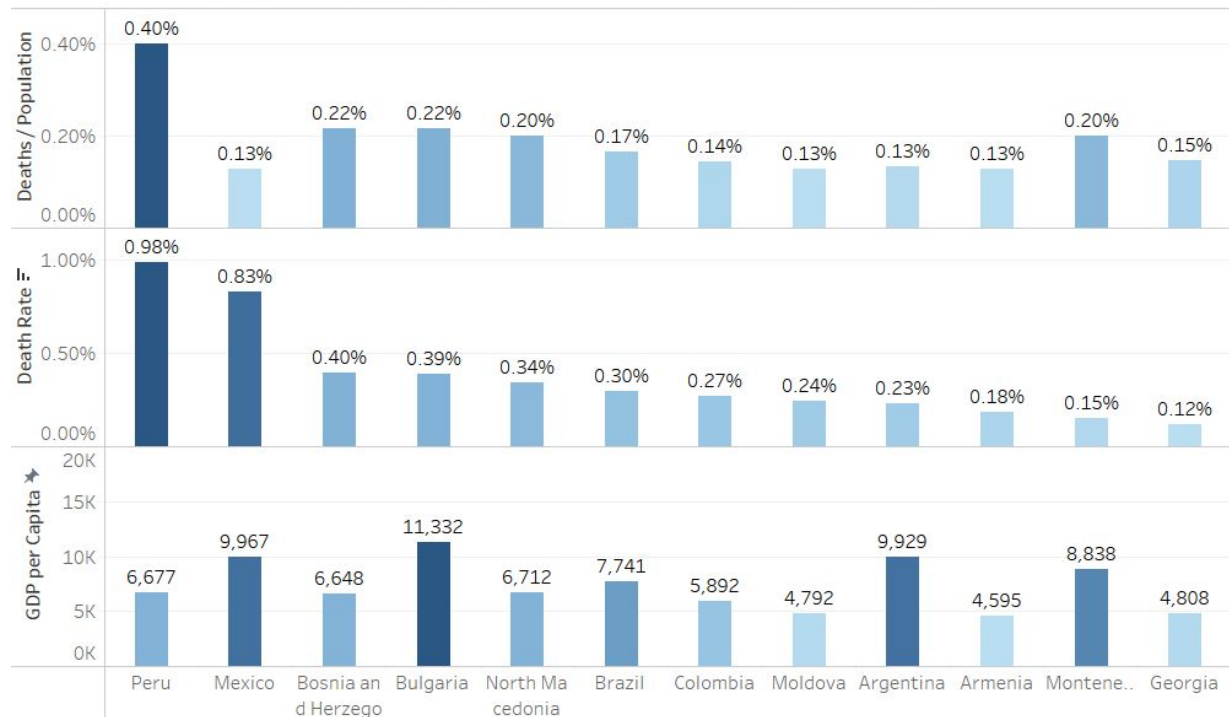
1.2 Deaths / Total Cases

Number of Deaths / Total Cases signifies the level of Hospital Resources.

1. **GDP Per Capita lower than Poverty Line**
2. **Ratio over 0.25%.**

1.1 Death / Total Cases

Countries that need aid in both prevention and health resources.

This page shows the countries that we have to aid.

They have to satisfy the following requirements:
1. GDP per Capita lower then poverty line;
2. Death Rate is high: over 0.12%;
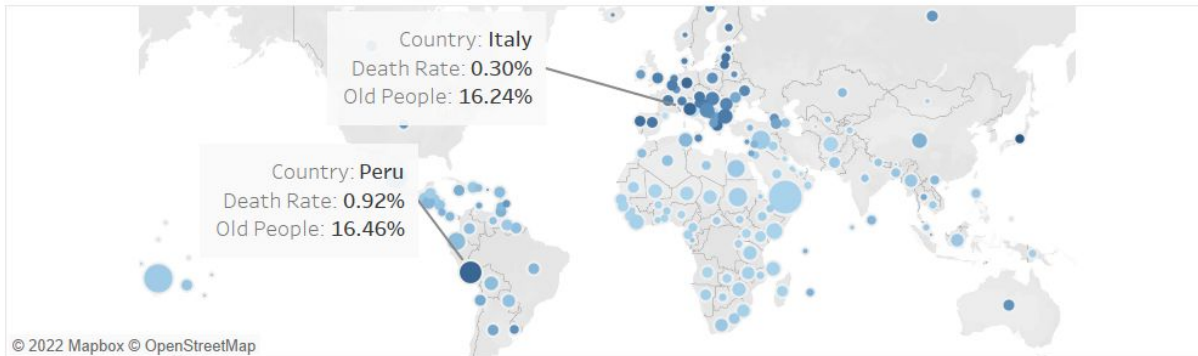3. Infection Rate is high: Over 0.13%.

These 12 countries should be the first ones to help.

2. Aging Problem & Covid

Death Rate & Aging Problem Relationship

Country: **Italy**
Death Rate: **0.30%**
Old People: **16.24%**

Country: **Peru**
Death Rate: **0.92%**
Old People: **16.46%**

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Year of Date
- [ ] (All)
- [ ] 2020
- [✓] 2021
- [ ] 2022

Age 70 > 7% & Death Rate Top 20 & GDP Per Capita < 12000
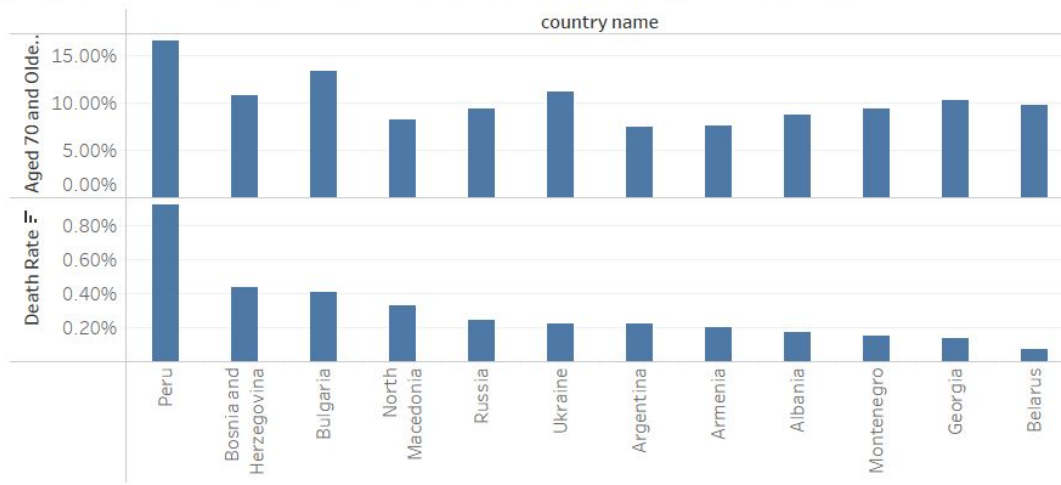
This page shows the countries that has:
1. **More than 7% of people over 70**
2. **Average GDP < poverty line**

The graph below is ranked by Death Rate.
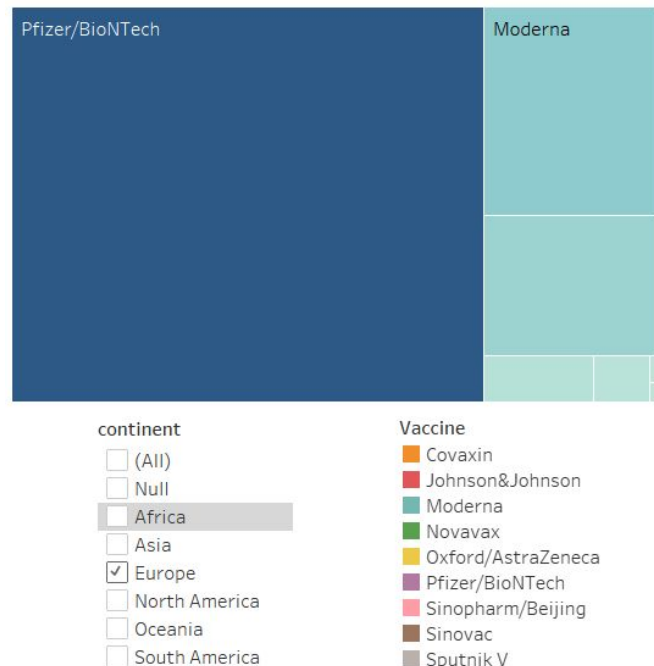
WHO should:
1. **Aim to promote more prevention of chronic diseases;**
2. **Call for more access to age-friendly primary health care.**

Reason: Many aged people died after getting Covid weren't directly killed by Covid, but by a combination of deadly chronic diseases and Covid (which will impede breathing).
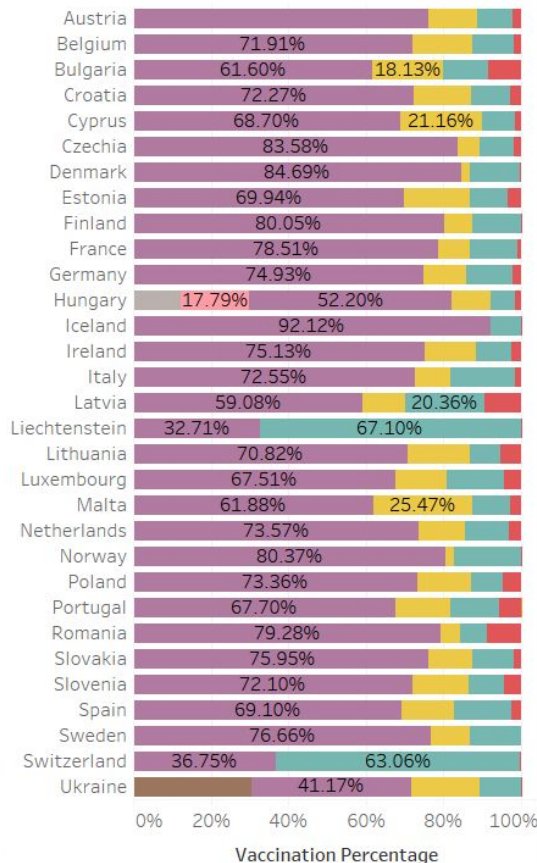
3.1 Vaccinations of Covid

Vaccination Popularity

Pfizer/BioNTech

Moderna

European Vaccination Percentage

Country	Percentage
Austria	
Belgium	71.91%
Bulgaria	61.60% / 18.13%
Croatia	72.27%
Cyprus	68.70% / 21.16%
Czechia	83.58%
Denmark	84.69%
Estonia	69.94%
Finland	80.05%
France	78.51%
Germany	74.93%
Hungary	17.79% / 52.20%
Iceland	92.12%
Ireland	75.13%
Italy	72.55%
Latvia	59.08% / 20.36%
Liechtenstein	32.71% / 67.10%
Lithuania	70.82%
Luxembourg	67.51%
Malta	61.88% / 25.47%
Netherlands	73.57%
Norway	80.37%
Poland	73.36%
Portugal	67.70%
Romania	79.28%
Slovakia	75.95%
Slovenia	72.10%
Spain	69.10%
Sweden	76.66%
Switzerland	36.75% / 63.06%
Ukraine	41.17%

Vaccination Percentage

continent
- ☐ (All)
- ☐ Null
- ☐ Africa
- ☐ Asia
- ☑ Europe
- ☐ North America
- ☐ Oceania
- ☐ South America

Vaccine
- 🟧 Covaxin
- 🟥 Johnson&Johnson
- 🟩 Moderna
- 🟢 Novavax
- 🟨 Oxford/AstraZeneca
- 🟪 Pfizer/BioNTech
- 🟪 Sinopharm/Beijing
- 🟫 Sinovac
- ⬜ Sputnik V

From the right stacked bar chart we can see that most European countries uses Pfizer the most, and the Moderna the second, but Hungary and Ukraine acted differently: one used Sputnik V and one used mainly Sinovac.

Here we will try to find if there is a relation between vaccine choice and total cases (in an extremely easy and not unscientific way).

First graph shows vaccination popularity. Second graphs shows more details for each country.

Since the data by manufacturer is only available for Europe, let's analyze how the vaccines performed.

Special countries: Hungary and Ukraine. (For all others, Pfizer and Moderna take more than 85%)

Ukraine

Hungary

All Other European Countries
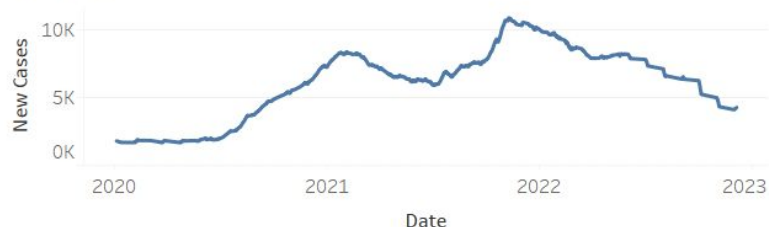
Number of new cases for these 2 Special Countries.

From the graph, we can't say Ukraine and Hungary's total cases are the same as the other European countries.

Meanwhile, Ukraine and Hungary was quite similar, indicating possibly other vaccinations are not as good as Pfizer and Moderna because they were not able to slow down spread of virus starting from Sep. 2020.

(Note: This conclusion is drawn not based on scientific evidence, but only from the graph.)
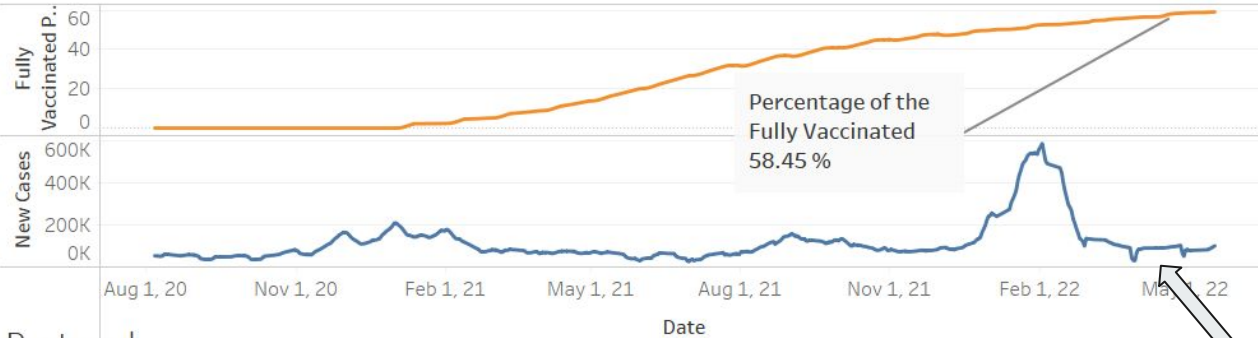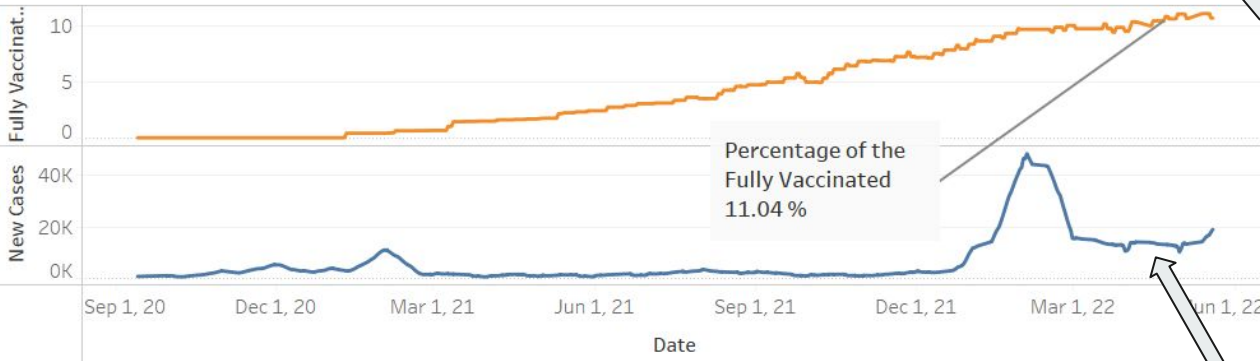
A little finding about the relation between New Cases and the overall fully vaccinated percentage:

It takes less time for highly vaccinated country to recover from a surge in new cases to previous level.

These two countries are an example.

3. Conclusions

1. Help Peru, Modova, Armenia, Bosnia, Bulgaria, Georgia etc. for Covid Prevention and Medical Resources.
2. Help Peru, Bosnia, Bulgaria, Ukraine, Albania etc. for promoting better chronic disease treatment methods and age-friendly health care.
3. Get Pfizer or Moderna Vaccination.

Thank you