

Pandemic Ponderings

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Why we chose the COVID-19 Pandemic...

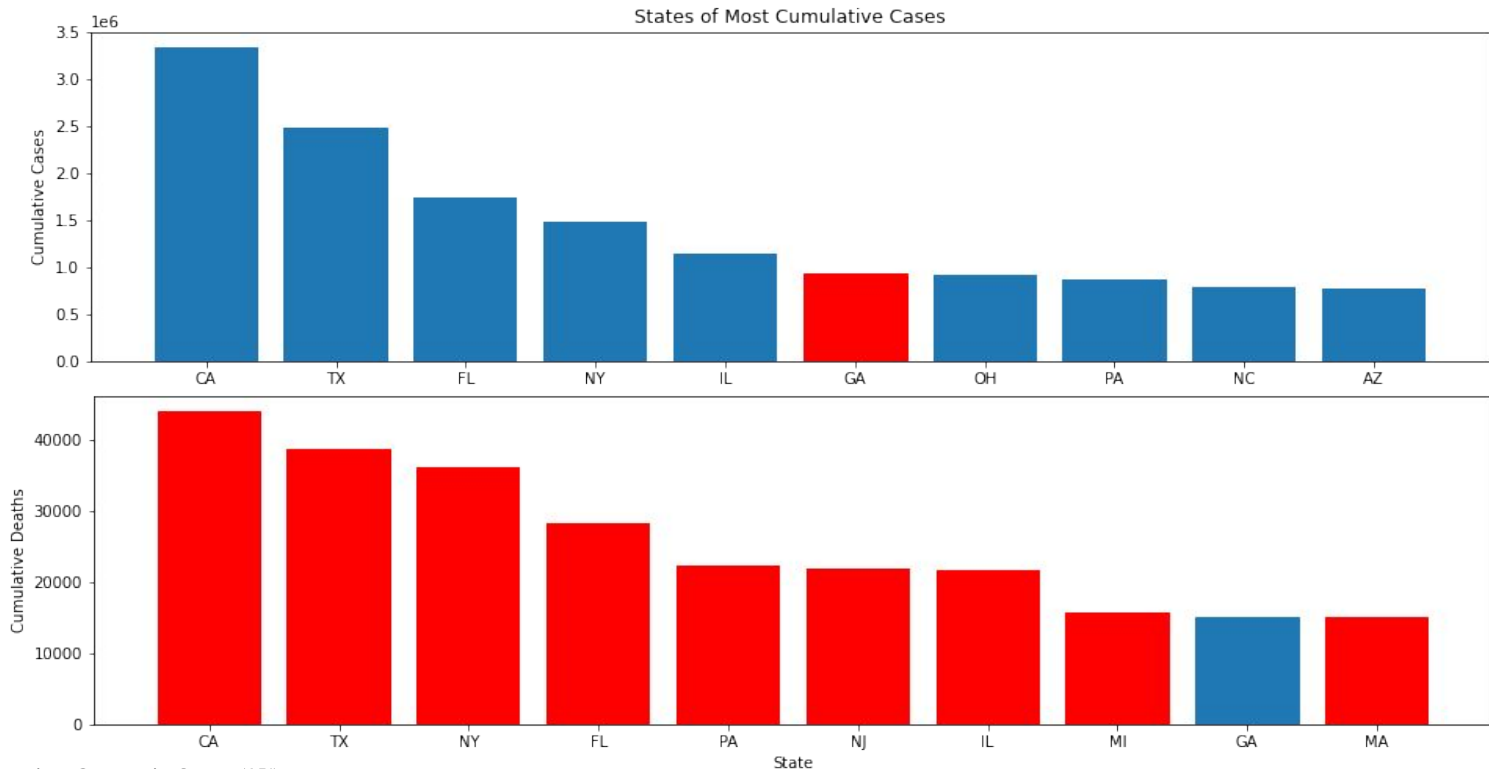
The world is sharing concern for the survival of the human race from this virus. We have all learned public health best practices - we don our face masks, social distance and wash our hands. Our lives have changed due to mandatory stay-at-home measures, virtual learning, and the closure of businesses and public places. We're more than a year into this and now we're in a race to bolster immunity in our cities to re-establish a sense of normalcy. Where are we in that effort in the U.S.?

What is the situation in the U.S., as well as in Georgia?

1. How does Georgia compare with other states in terms of cases and deaths?
 2. Are there more cases in areas of high density?
 3. What age groups in Georgia have the most cases?
 4. How do hospitalizations for COVID 19 correlate with deaths in Georgia?
 5. Are states with higher cases receiving more vaccines?
 6. Where is the U.S. in terms of reaching immunity?
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Aha!

How does Georgia compare with other states?



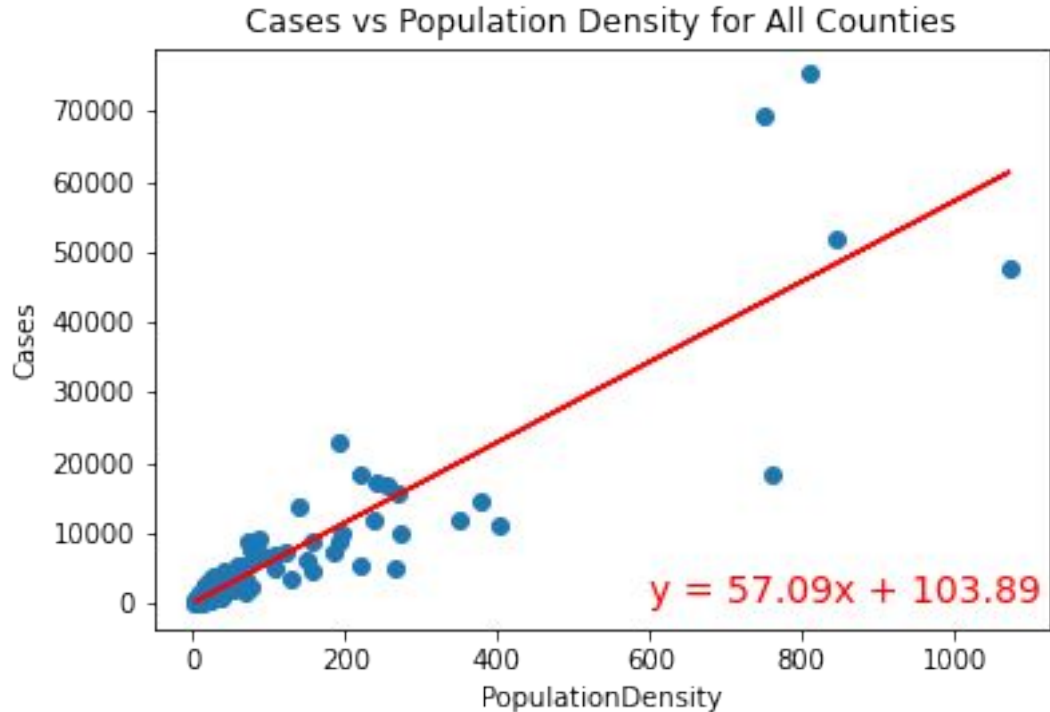
→ Census American Community Survey (API) <https://www.census.gov/data/developers/data-sets/acs-5year.html>

→ The COVID Tracking Project (API) <https://covidtracking.com/data/api>

Aha!

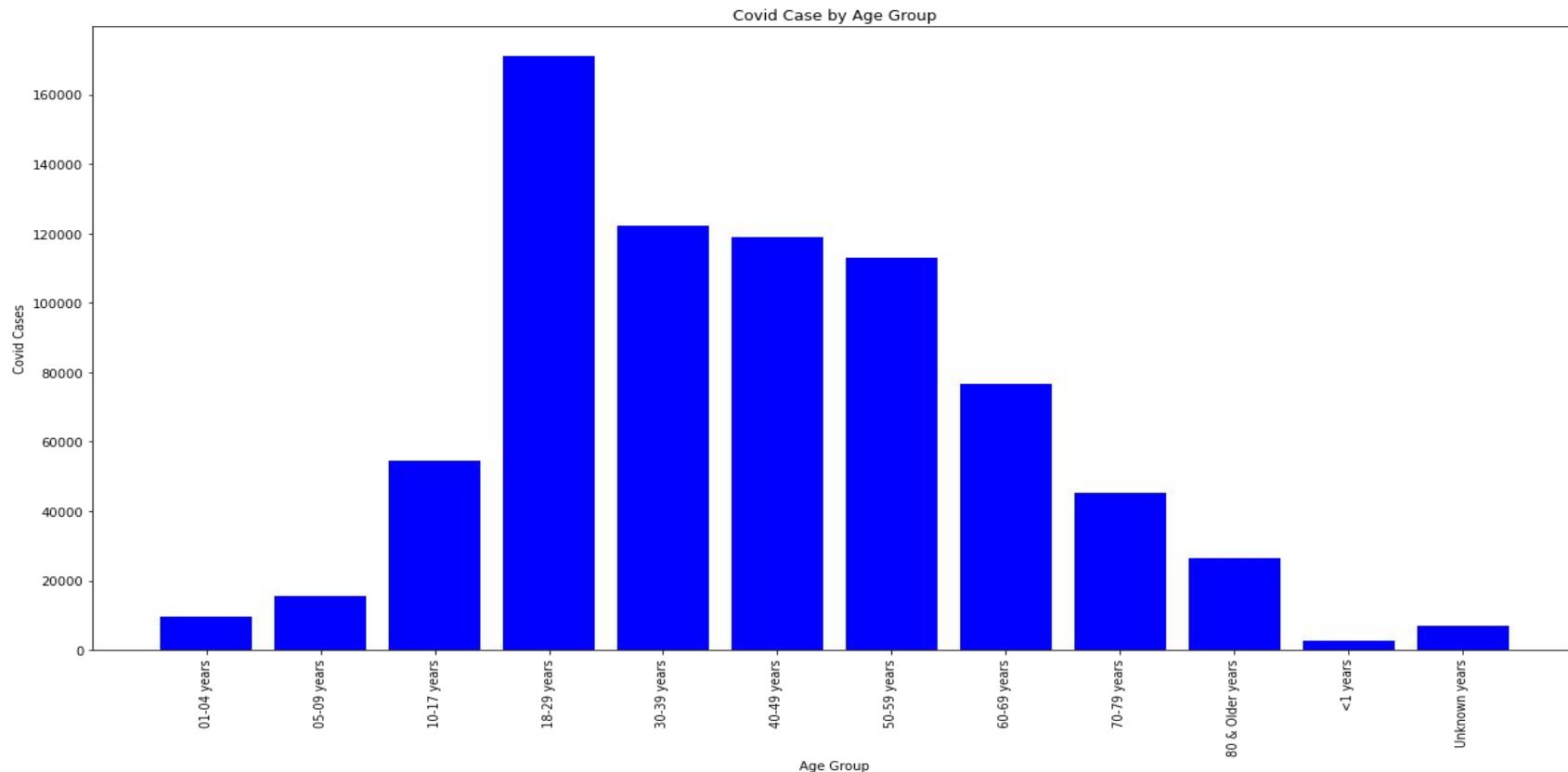
Are there more cases in areas of high density in Georgia?

- The correlation between both factors is 0.896
- The linear regression model is $y = 57.09x + 103.89$



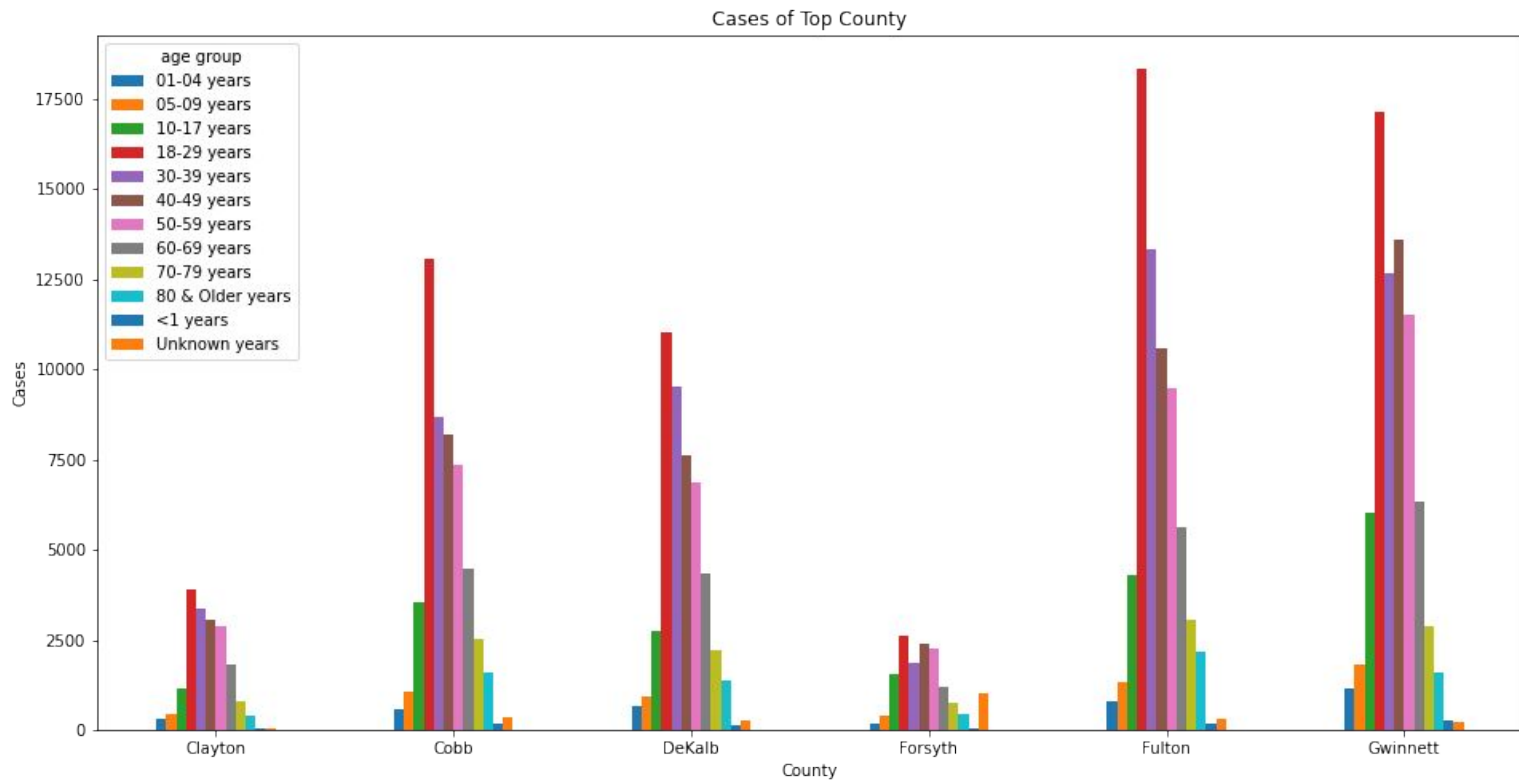
Aha!

What age groups in Georgia have the most cases?



Aha!

What age groups in Georgia have the most cases?

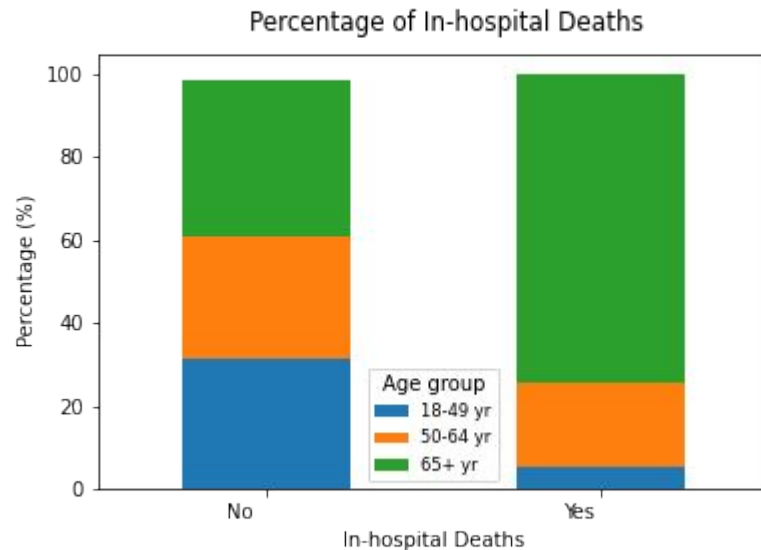
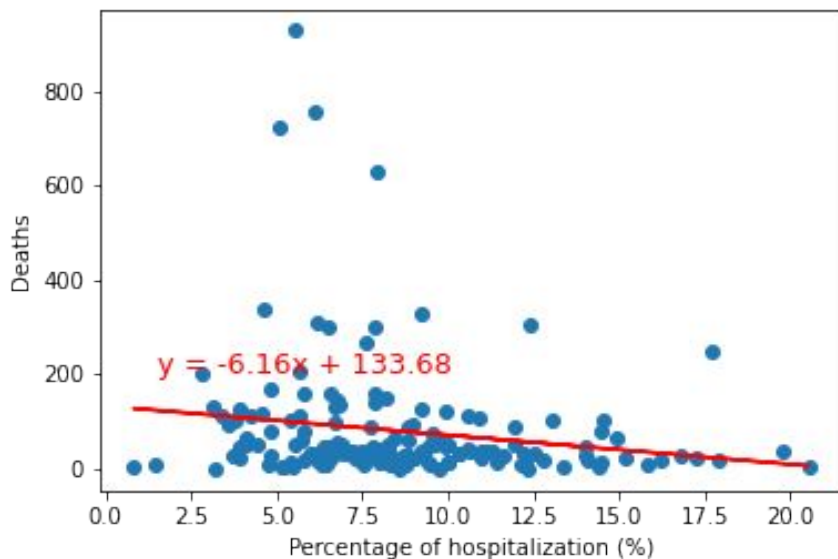


Aha!

How do hospitalizations for COVID 19 correlate with deaths in Georgia?

The r-squared is 0.029

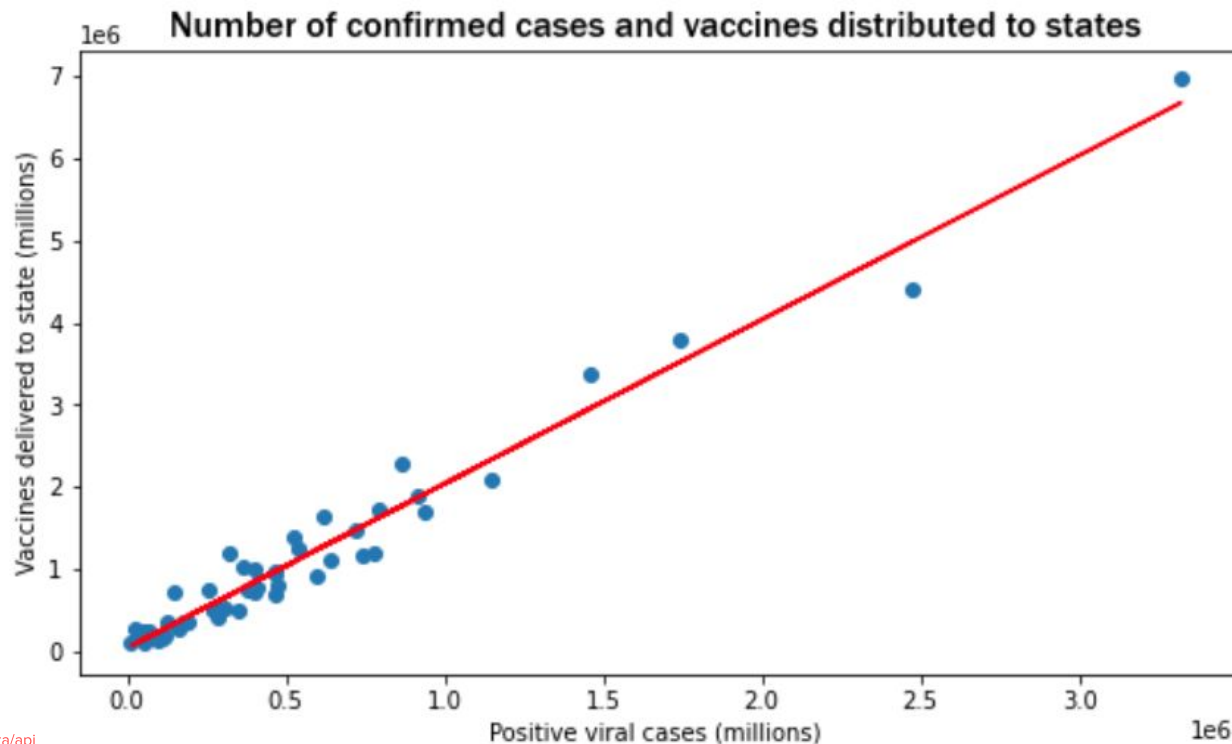
The linear regression model is $y = -6.16x + 133.68$



Aha!

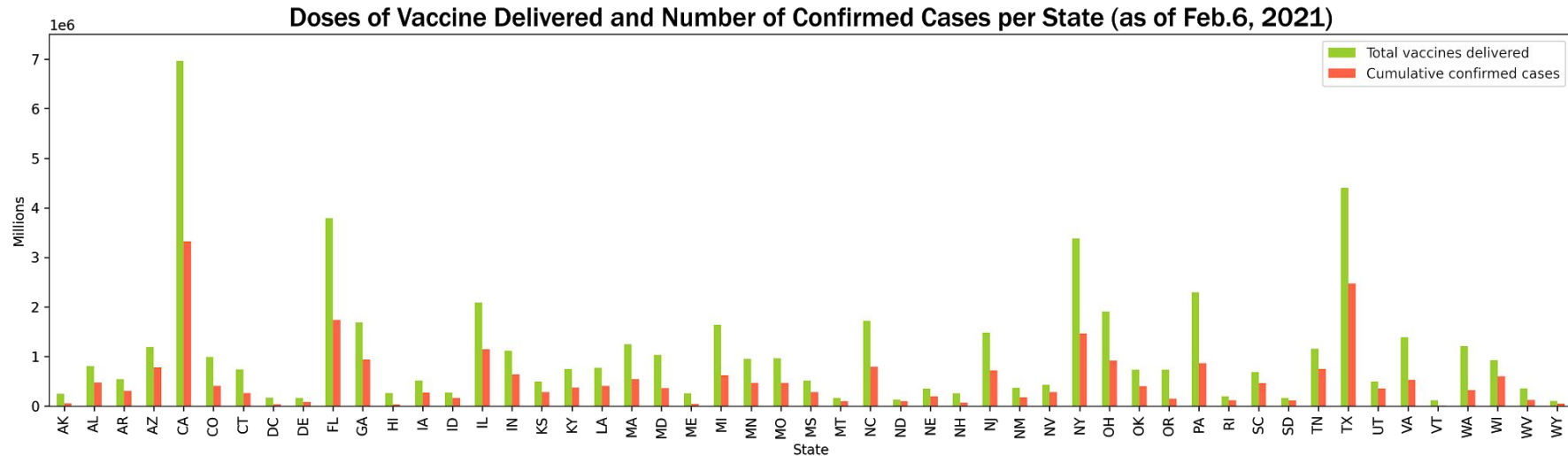
Are states with higher cases receiving more vaccines?

Strong positive correlation between the number of cases and the number of vaccines distributed to each state



Aha!

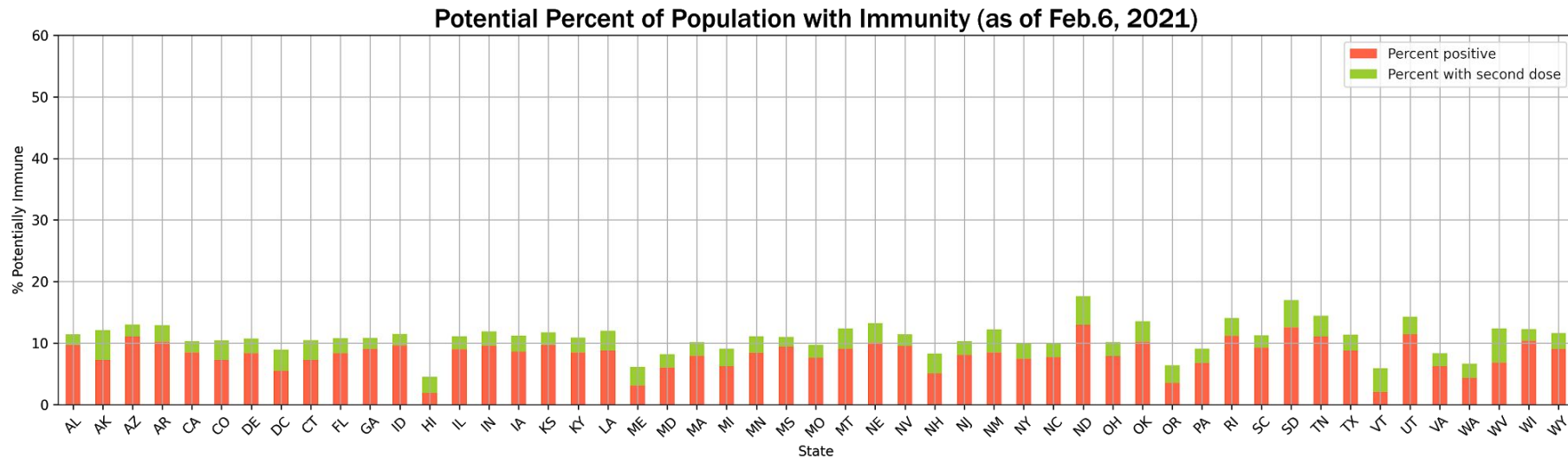
Are states with higher cases receiving more vaccines?



Better visual understanding of the proportions of cases and vaccines distributed

Aha!

Where is the U.S. in terms of reaching immunity?



- Most U.S. States hover around 10% potential immunity
- While North Dakota appears to have the highest level of immunity - it appears that $\frac{3}{4}$ of it comes from natural infection

The COVID Tracking Project (API) <https://covidtracking.com/data/api>

COVID Data Tracker - Vaccinations in the United States (csv) <https://covid.cdc.gov/covid-data-tracker/#vaccinations>

Census American Community Survey (API) <https://www.census.gov/data/developers/data-sets/acs-5year.html>

In Conclusion...

- Areas of high density have more cases
- In the U.S., Georgia ranks 6th in terms of cases and 9th in terms of deaths
- COVID-related hospitalizations have a weak correlation with deaths
- The 18-29 year old age group has the greatest number of confirmed cases in Georgia
- States with a higher number of cases are receiving more vaccines
- For most states, approximately 10% of their population has either been naturally infected or fully vaccinated

Questions????



Data & Research

- **The COVID Tracking Project** collects and publishes the most complete data about COVID-19 in the U.S. (API) <https://covidtracking.com/data/api>
- **COVID Data Tracker - Vaccinations in the United States** (csv) <https://covid.cdc.gov/covid-data-tracker/#vaccinations>
- **Census American Community Survey** (API) <https://www.census.gov/data/developers/data-sets/acs-5year.html>
- **Georgia Department of Public Health Daily Status Report** <https://dph.georgia.gov/covid-19-daily-status-report>
- **CDC a Weekly Summary of U.S. COVID-19 Hospitalization Data** (csv) https://gis.cdc.gov/grasp/covidnet/COVID19_5.html

Supplemental

