

# ANALYSIS OF COVID19 VACCINATION IN THE U.S.

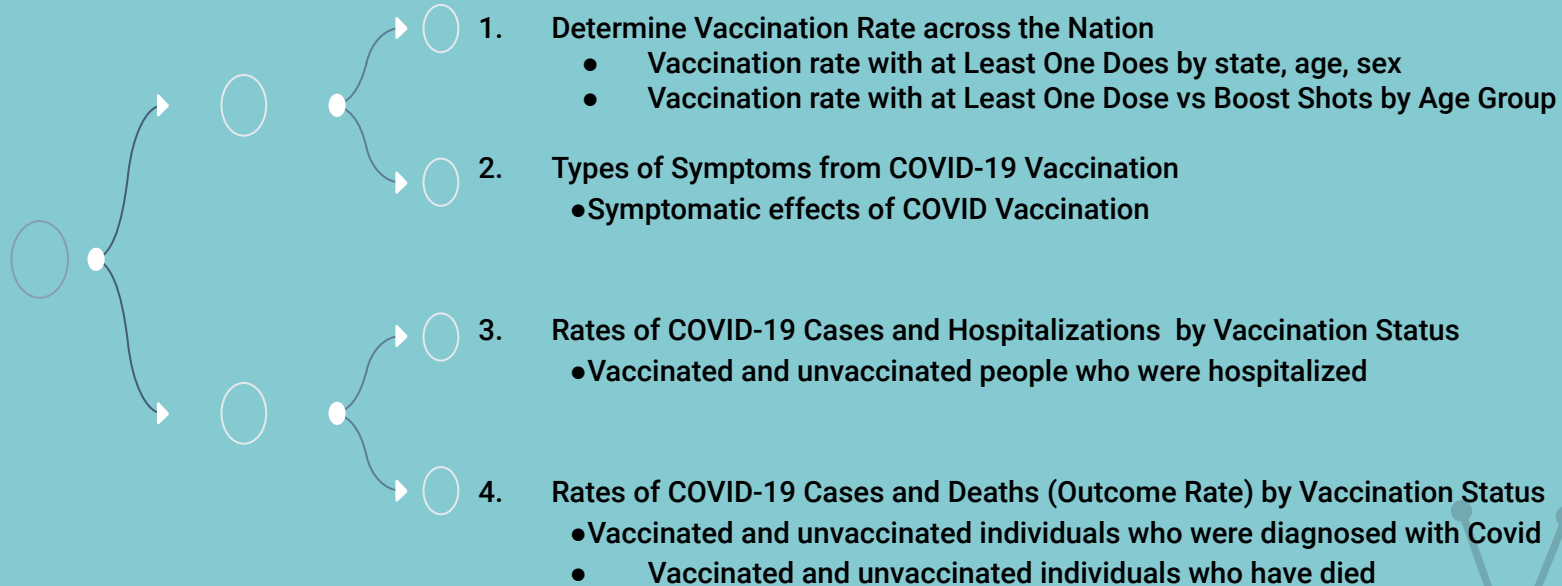
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- Yi Pan
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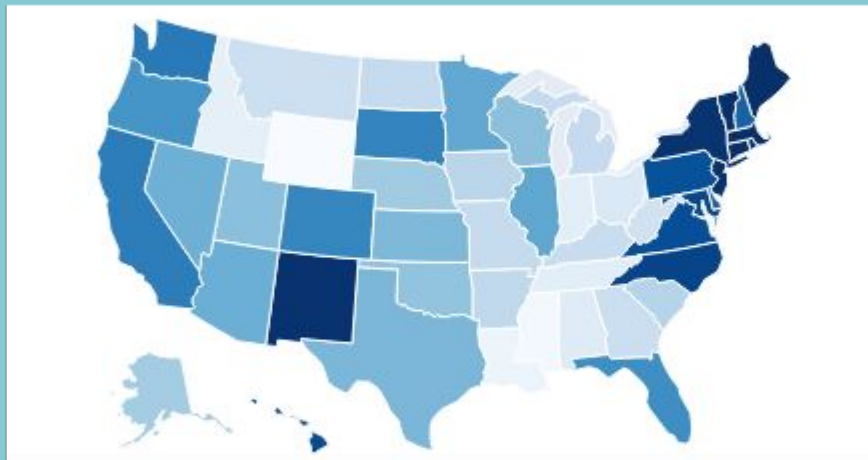
# RESEARCH QUESTION: HOW HAS COVID VACCINATION AFFECTED U.S. POPULATION HEALTH?



# VACCINATION STATUS -

## PERCENT OF THE TOTAL POPULATION WITH AT LEAST ONE DOSE BY STATES

Percent of the Total Population with at Least One Dose by States



Percentage (%)

90

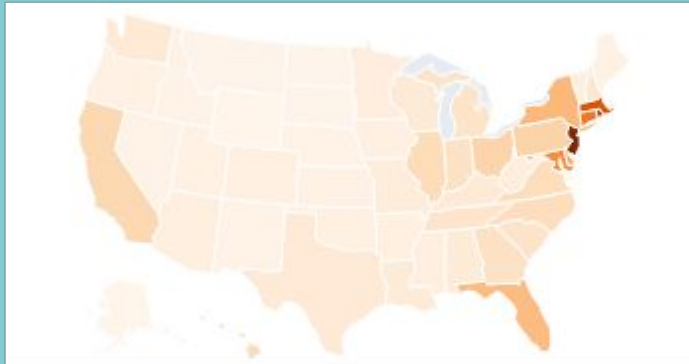
80

70

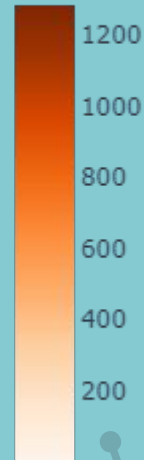
# PERCENT OF THE TOTAL POPULATION WITH AT LEAST ONE DOSE BY STATES AND POPULATION DENSITY

- In general, areas with higher population densities may be at greater risk for disease transmission
- New Mexico is an exception due strong policy support and other reasons

Population Density by States

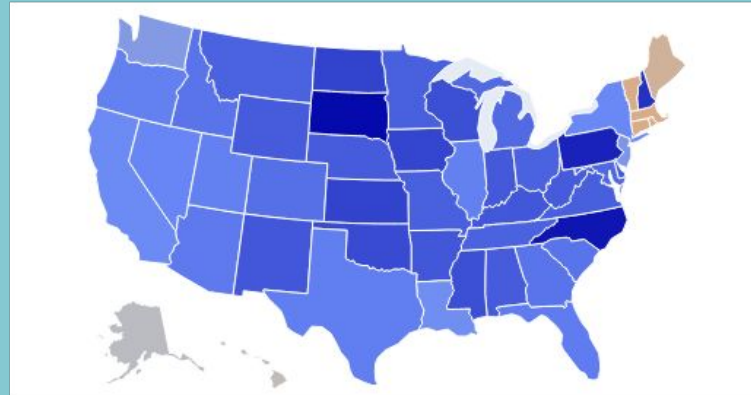
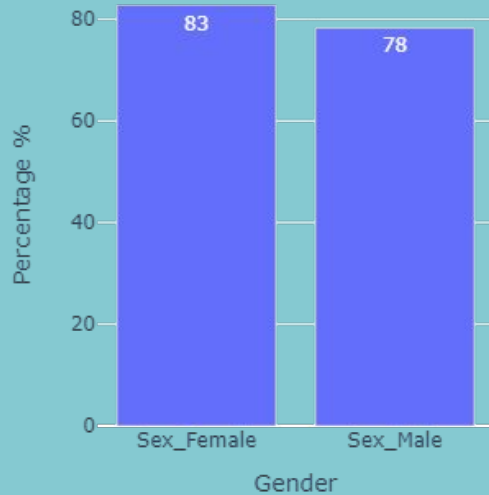


Population Density (per mi<sup>2</sup>)

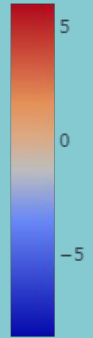


# VACCINATION RATE BY GENDER IN US

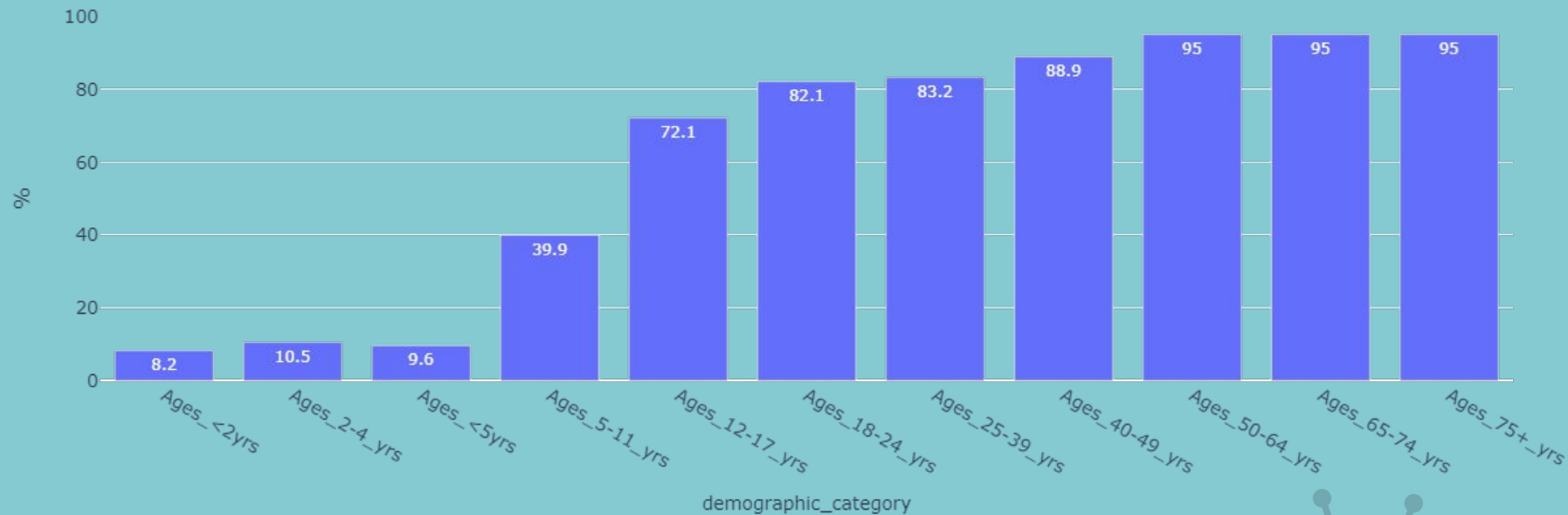
Vaccination rate by Sex in US



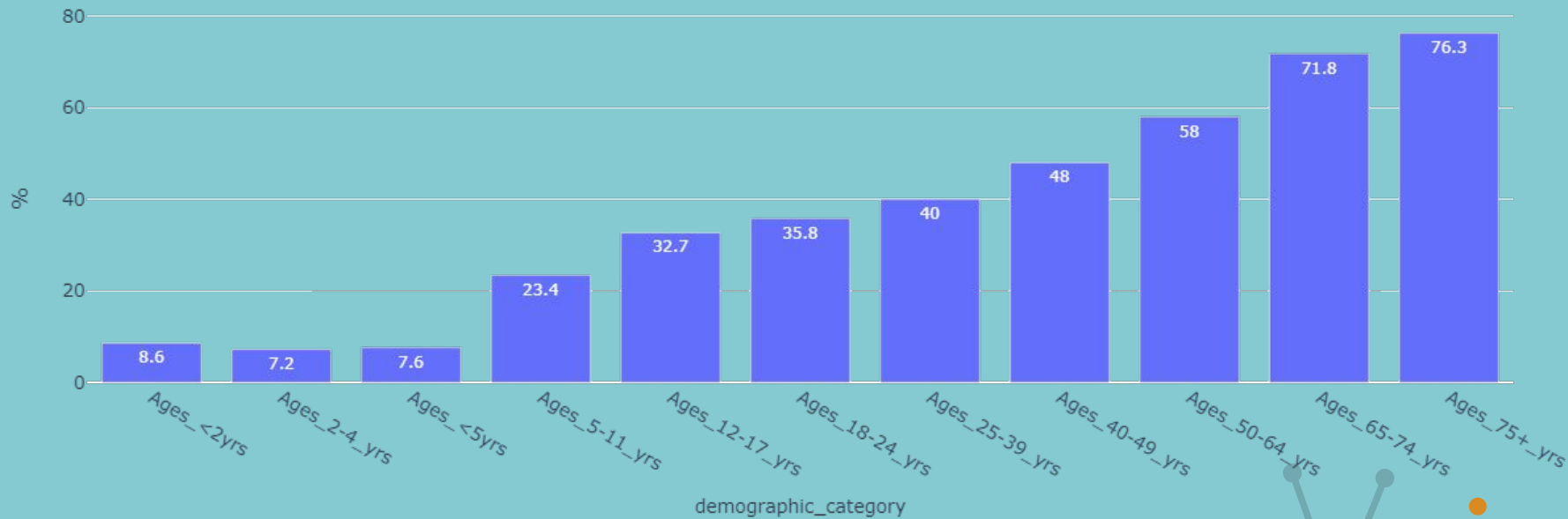
Percentage (%)



# US VACCINATION RATE WITH AT LEAST ONE DOSE BY AGE GROUP

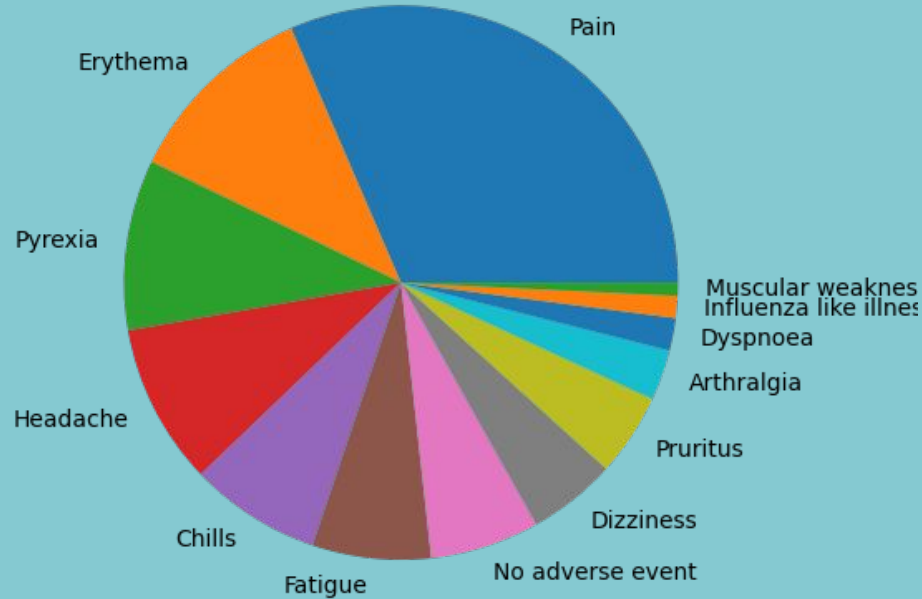


# US VACCINATION RATE WITH BOOSTER SHOTS BY AGE GROUP



# COVID VACCINATION SYMPTOMS

2020 COVID Vaccination Symptoms



## Medical Terms:

Erythema - Reddening of skin/skin irritation

Pyrexia - fever

Pruritus - itchy skin

Arthralgia - joint pain

Dyspnoea - difficult breathing



# COVID VACCINATION SYMPTOMS CONT.

## Medical Terms:

Erythema - Reddening of skin/skin irritation

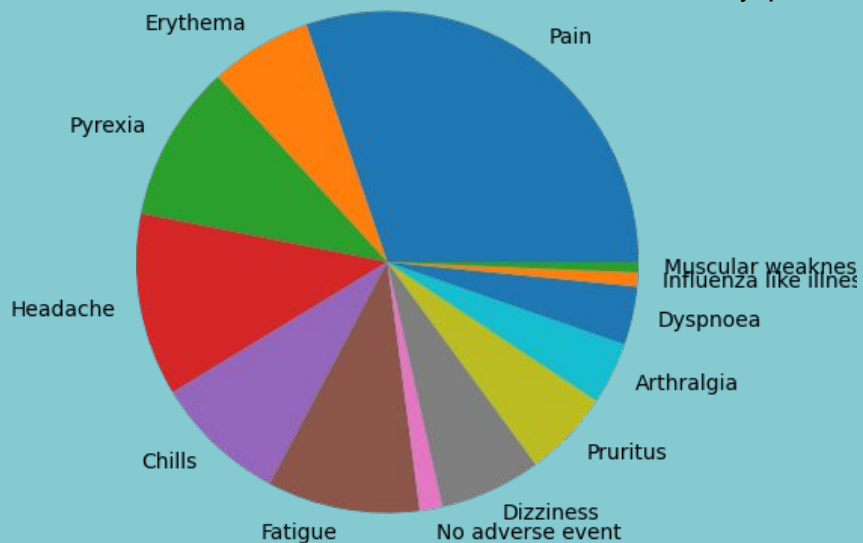
Pyrexia - fever

Pruritus - itchy skin

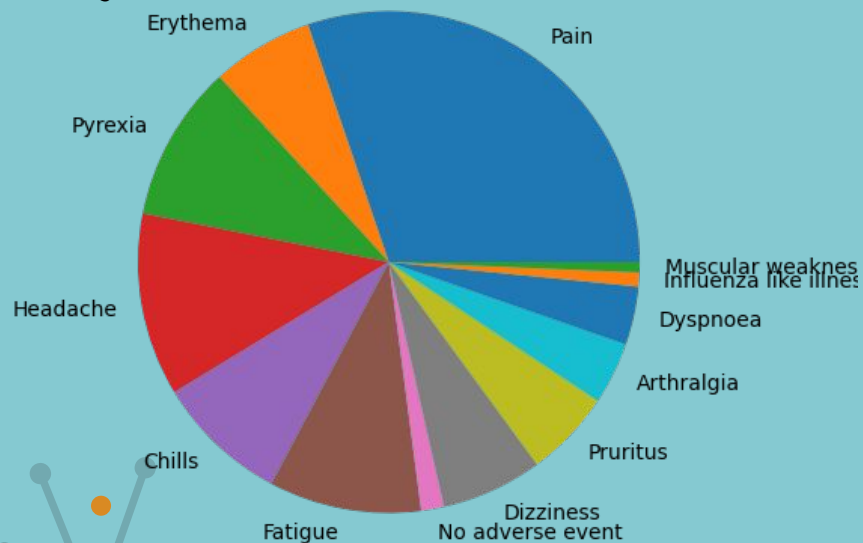
Arthralgia - joint pain

Dyspnoea - difficult breathing

2021 COVID Vaccination Symptoms



2022 COVID Vaccination Symptoms






# CONCLUSION - COVID 19 VACCINATION SYMPTOMS

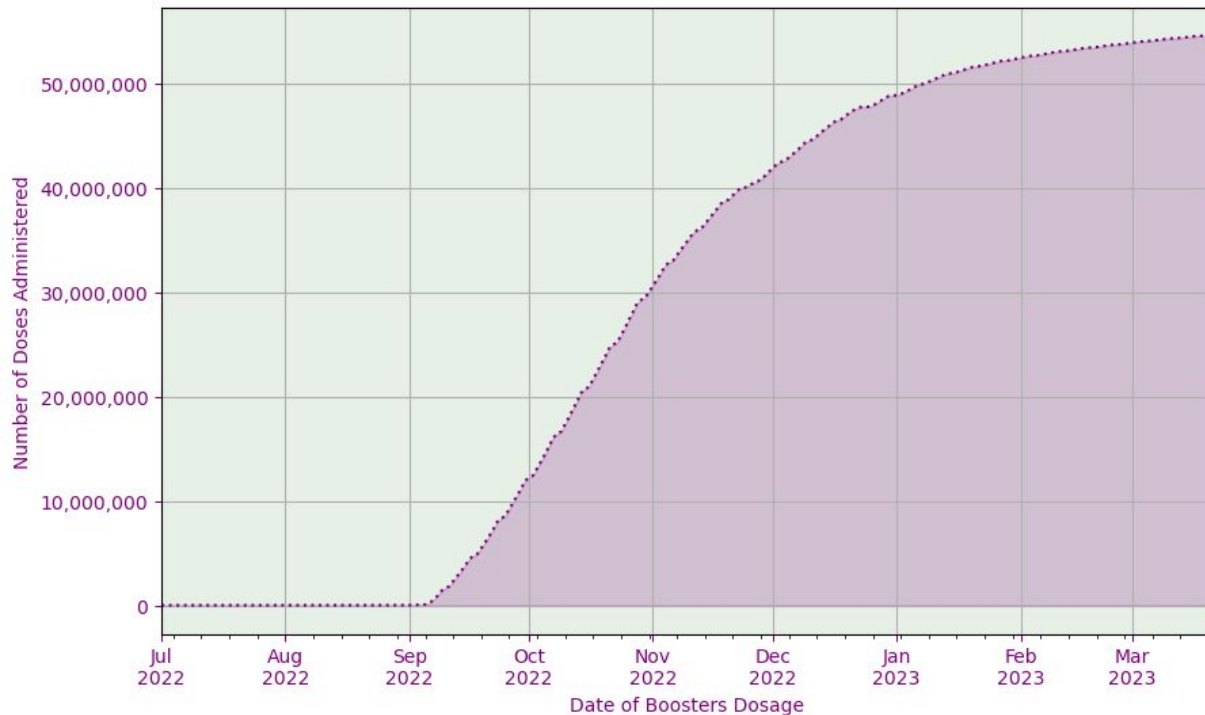


## Big Ideas

- COVID 19 Vaccination symptoms stayed relatively the same over time throughout the past three years the vaccination has been supplied to the U.S. population
  - The top 5 symptoms include:
    - Pain
    - Headache
    - Pyrexia
    - Erythema
    - Fatigue
  - Despite the alterations and increase in COVID vaccinations, the symptoms correlated to each have little change.
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# BOOSTER EFFECTIVENESS

Booster Doses Administered in the US



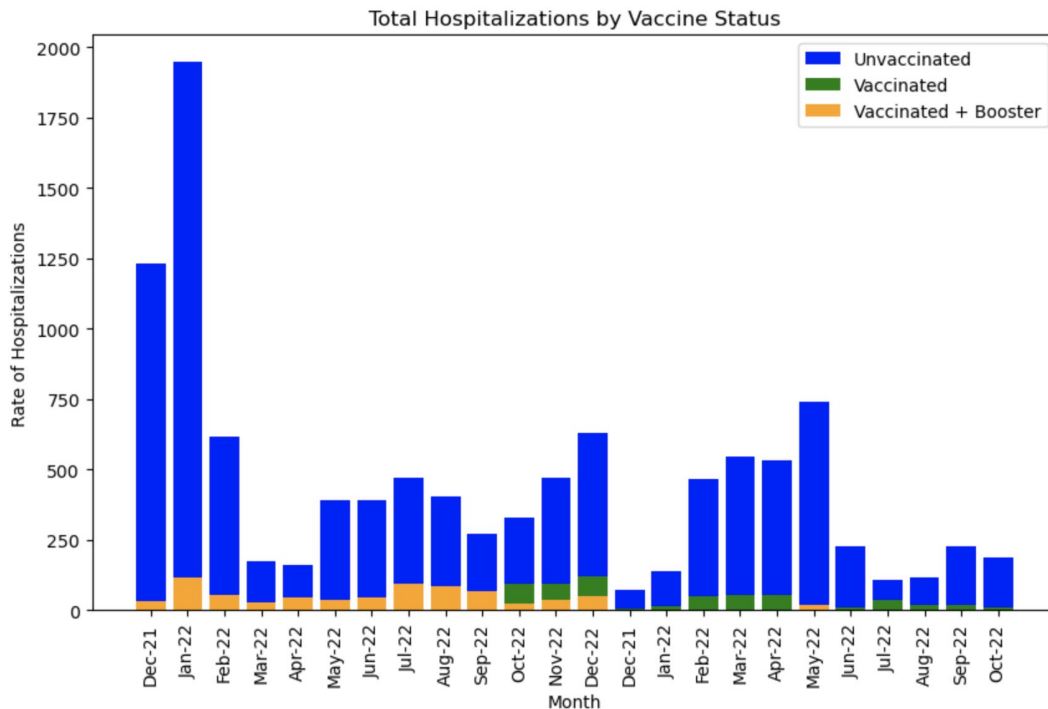
Data shows that as the Booster became available, there was a very steady and increasingly high turnout of doses administered.

In the next few graphs, we'll see the effectiveness of the booster shot through hospitalizations from individuals who are unvaccinated, and individuals who are vaccinated with and without the booster.

# HOSPITALIZATIONS BY VACCINATION STATUS

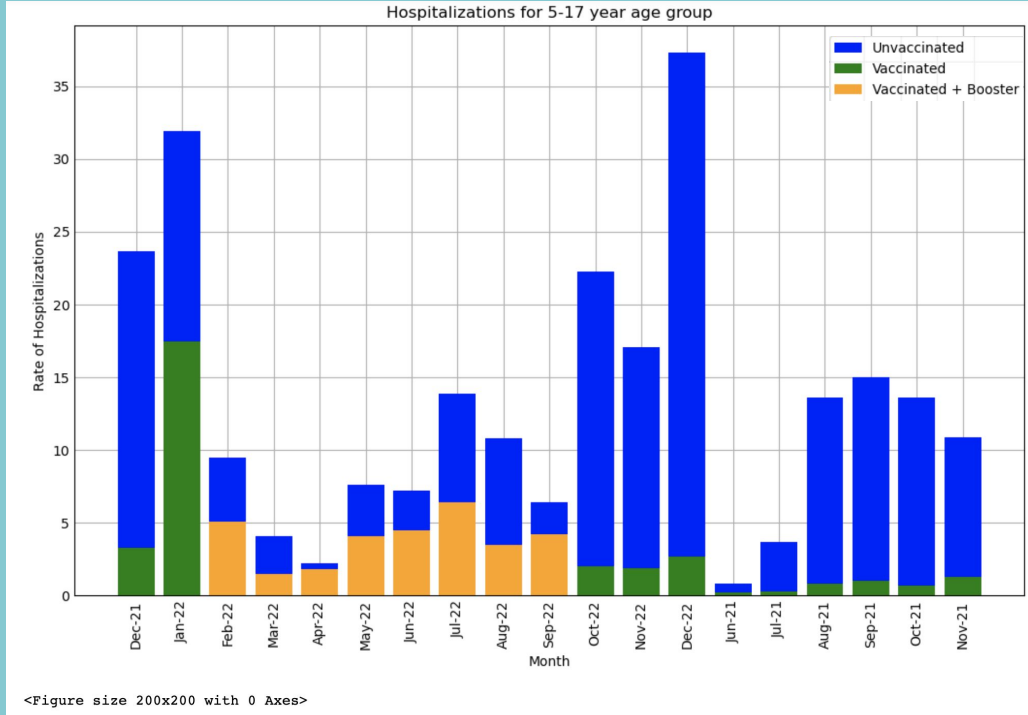
Over the course of a year, study shows that adults 18+ were hospitalized 16x higher than those who were vaccinated, and 2.6x higher than adults who were vaccinated with the booster.

There have also been more hospitalizations from those who are vaccinated with the booster, than those who only received the vaccination.



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# HOSPITALIZATIONS BY AGE GROUP

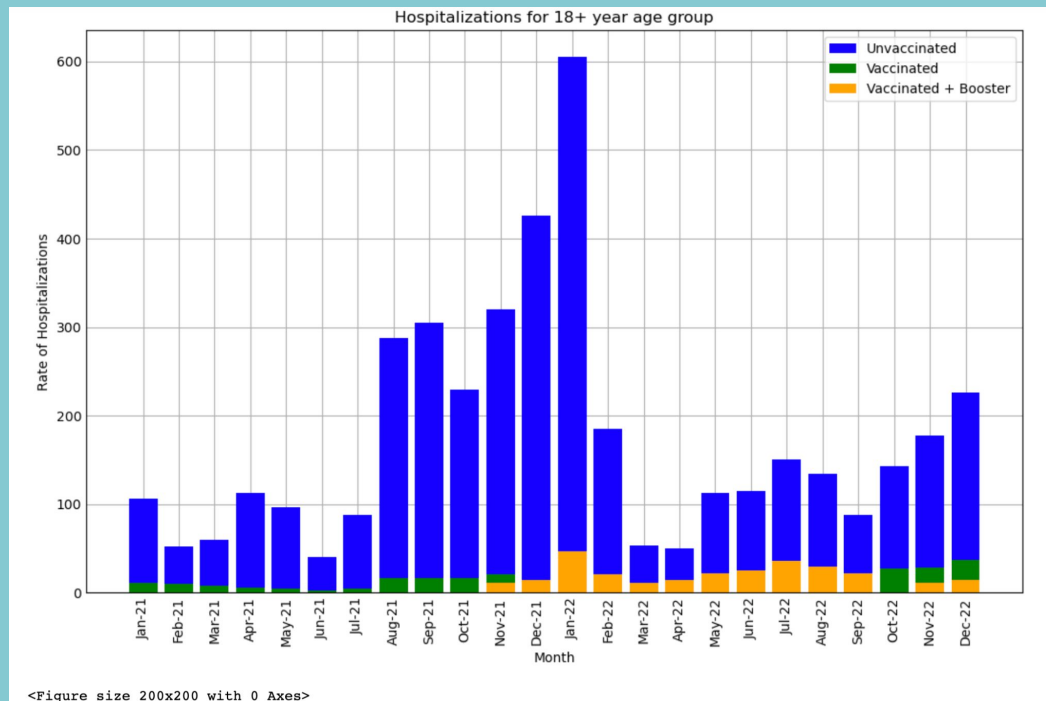


There was a surge in hospitalizations for the youth in January 2022, and December 2022

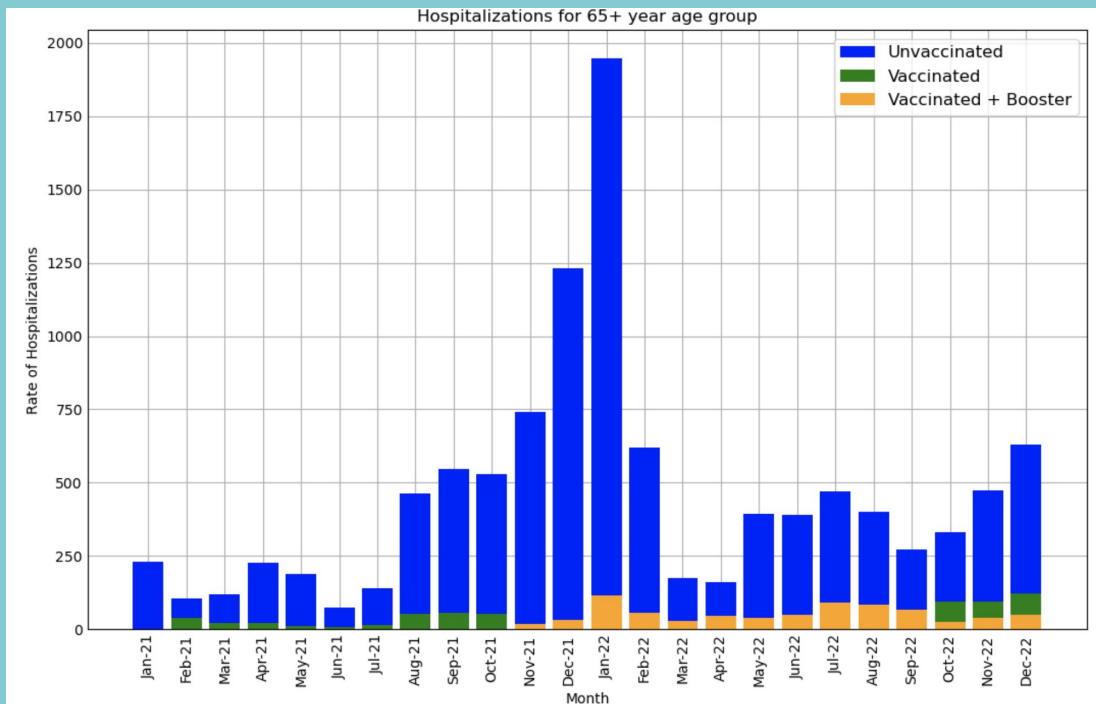
Furthermore, there were more hospitalizations for those that were unvaccinated, than those that were vaccinated with the booster

# HOSPITALIZATIONS BY AGE GROUP CONT.

This shows a decrease in hospitalizations from vaccinated adults 18+ without the booster, and an increase in hospitalizations between November 2021 to September 2022 in vaccinated adults with the booster



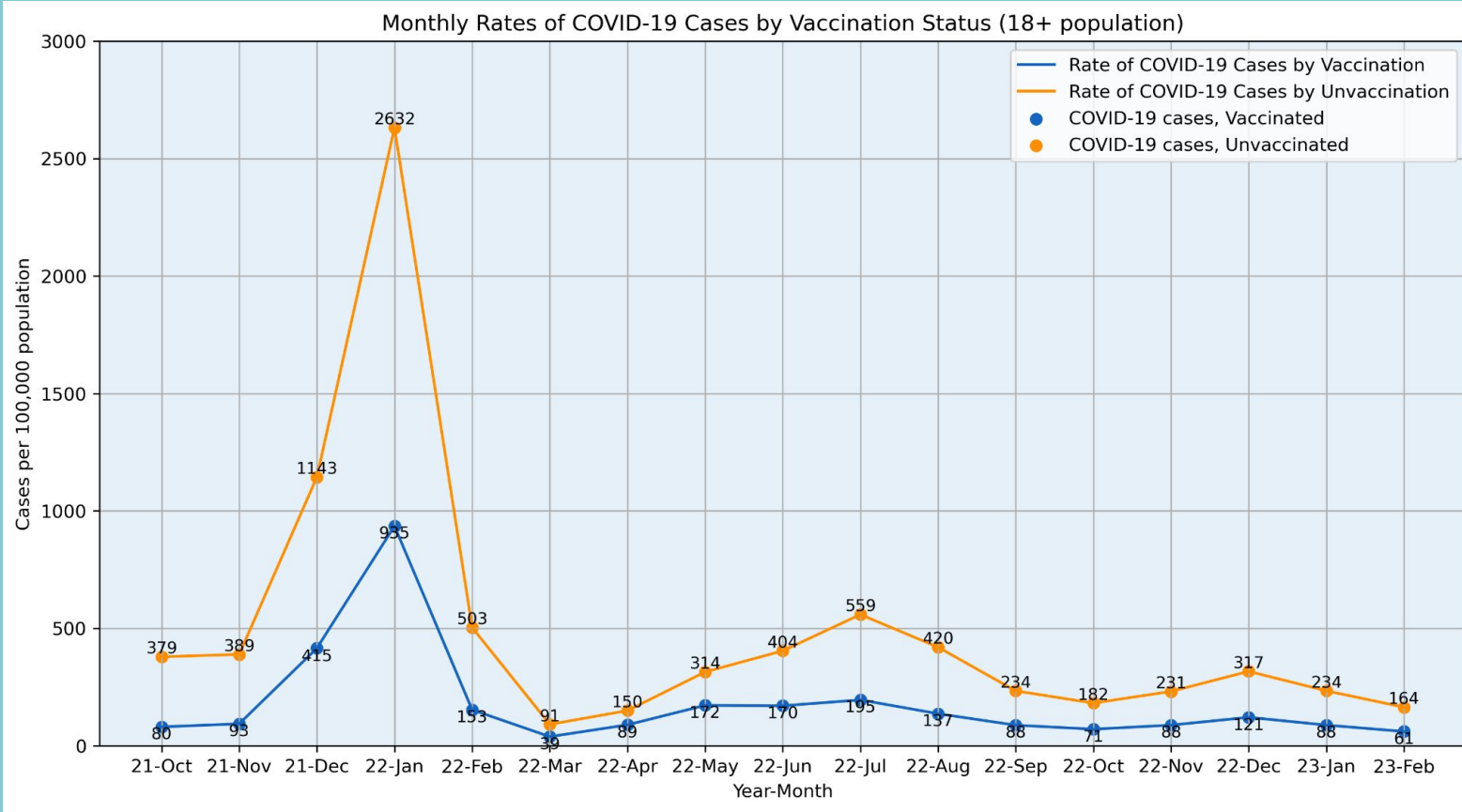
# HOSPITALIZATIONS BY AGE GROUP CONT.



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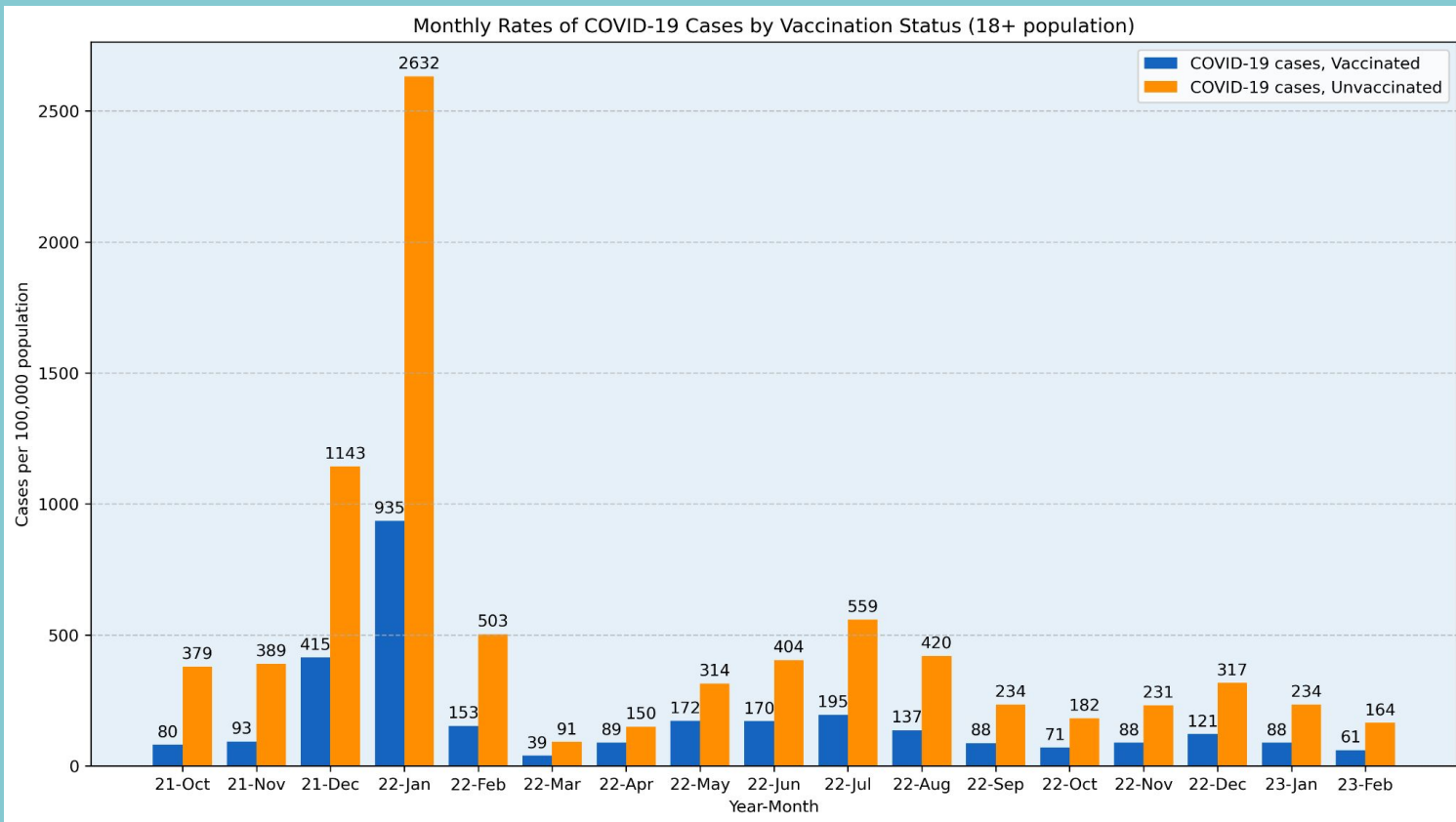
Overall these visuals show that there is an overwhelming outcome of hospitalizations amongst unvaccinated individuals, which gathers that vaccinations make a significant difference compared to those that are unvaccinated.

# COVID CASES AMONG VACCINATED AND UNVACCINATED

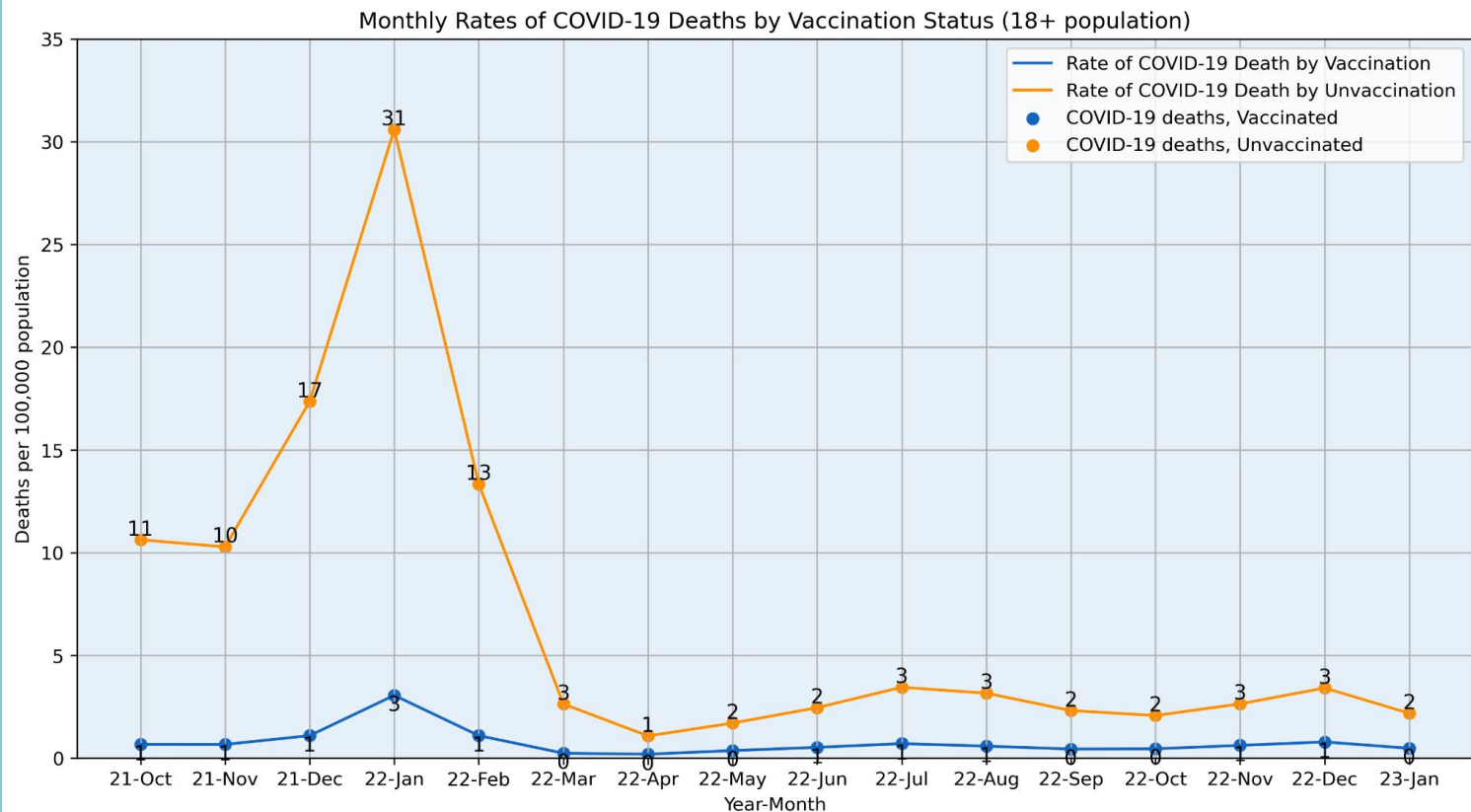




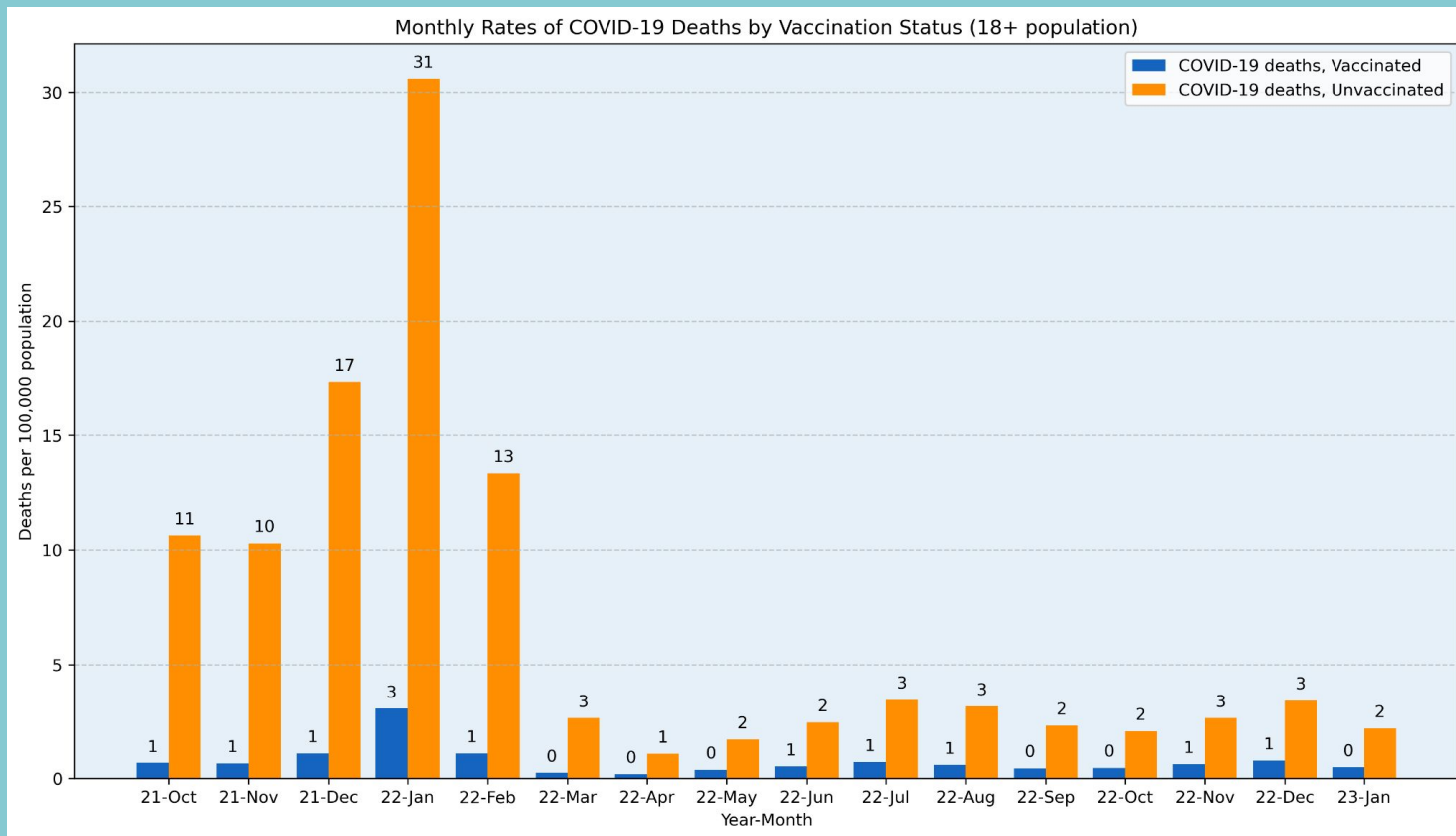
# COVID CASES AMONG VACCINATED AND UNVACCINATED CONT.



# COVID MORTALITY AMONG VACCINATED AND UNVACCINATED



# COVID MORTALITY AMONG VACCINATED AND UNVACCINATED CONT.





# ANALYSIS AND CONCLUSION

- The visualizations clearly show a difference between those vaccinated and those unvaccinated for COVID-19. All visualizations show a higher outcome rate for unvaccinated individuals.
  - Both line charts and bar charts show higher outcome rates for unvaccinated individuals than vaccinated individuals.
  - In conclusion, these visualizations and analysis demonstrate that unvaccinated individuals consistently have higher COVID-19 outcome rates compared to vaccinated individuals. The results show that vaccination reduces the risks associated with COVID-19, demonstrating the value of vaccination campaigns and public health measures.
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