

COVID-19

DEATH RATE
ANALYSIS



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Points for discussion:

Topics and highlights

- Overview of Data
- Basic demographics
- Visualization of data
- Opportunities for further investigation & data limitations





Total deaths in
the United States

983,409

As of April, 6, 2022



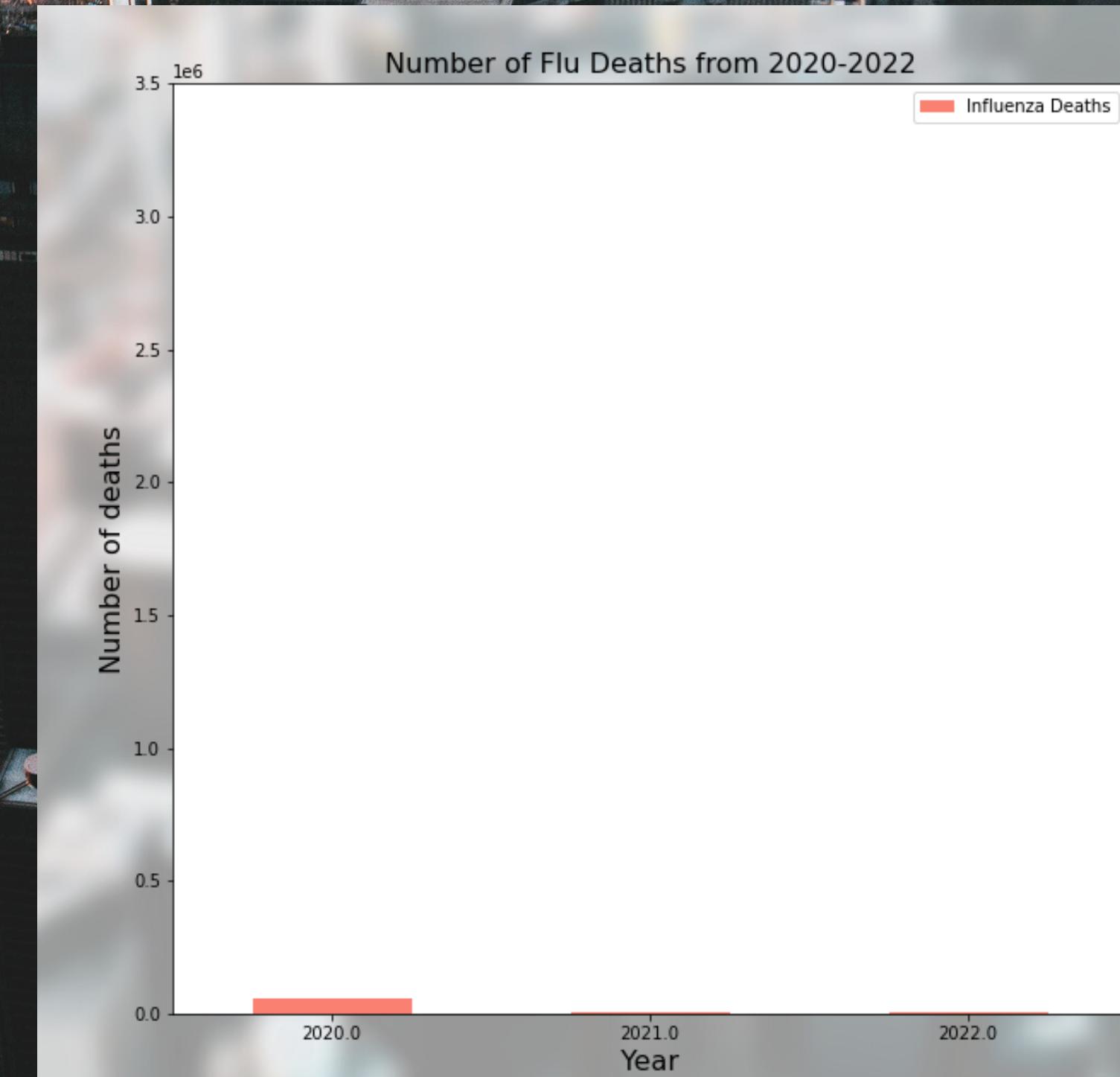
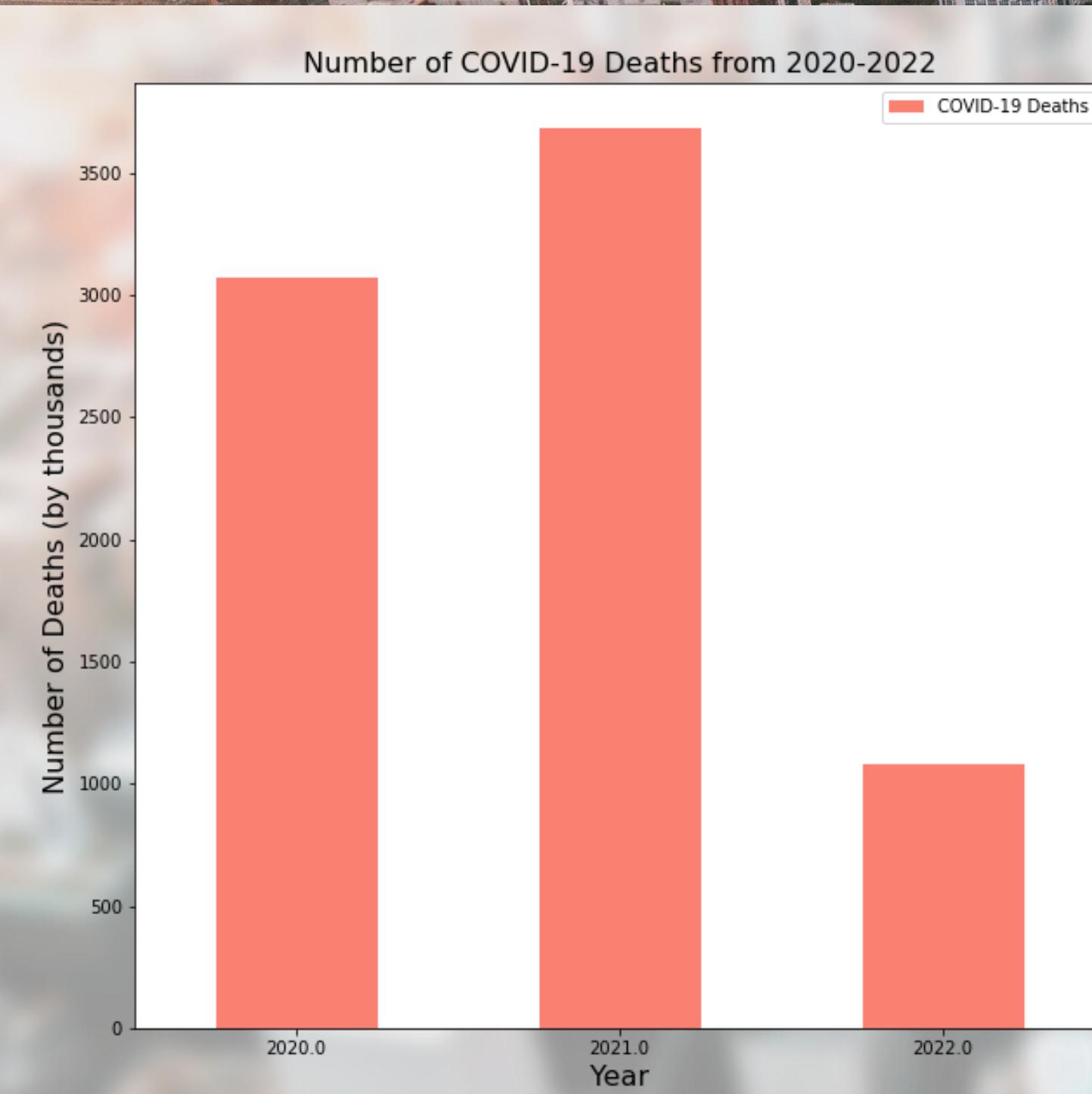


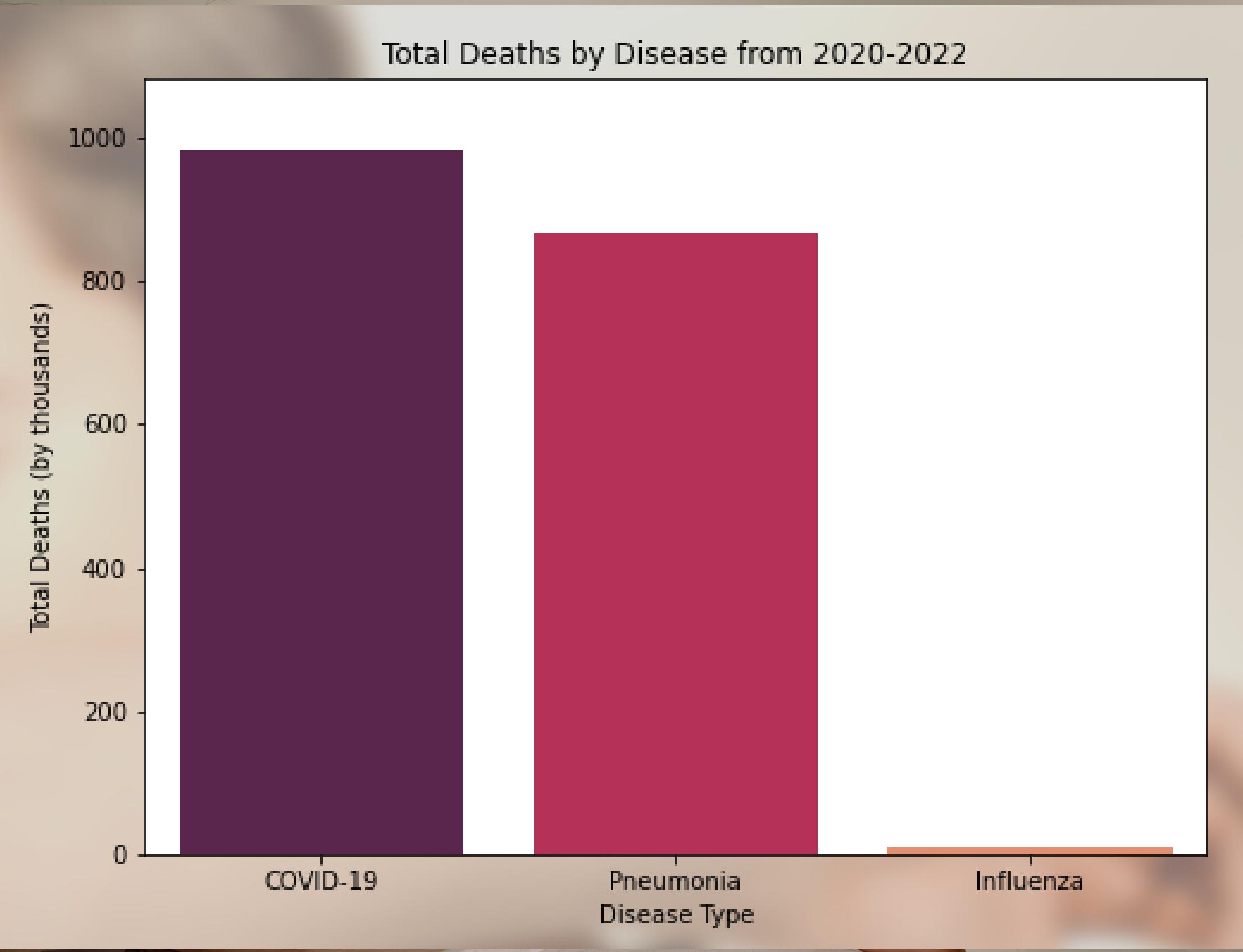
Data Source: **data.cdc.gov**

Original data set is "COVID-19 deaths by sex, age, state, year and month" and contains 88,000 rows, 16 columns.

- Cleaned data frame containing all pertinent information.
Erroneous columns and redundant categories removed.
- Data frame organized by year, independent from month.
2020, 2021, and 2022 only given the time period of the pandemic. 2021 is the only year with a full 12 months of data.
- Data frame organized by month.
Each month is numerically labeled (1-12) for ease of visualization.
- Gender, age, and location represented.
EALL 50 states including Puerto Rico in data set, Male/Female, and all age groups across the lifespan are in the data.

Covid is similar to the flu, right?

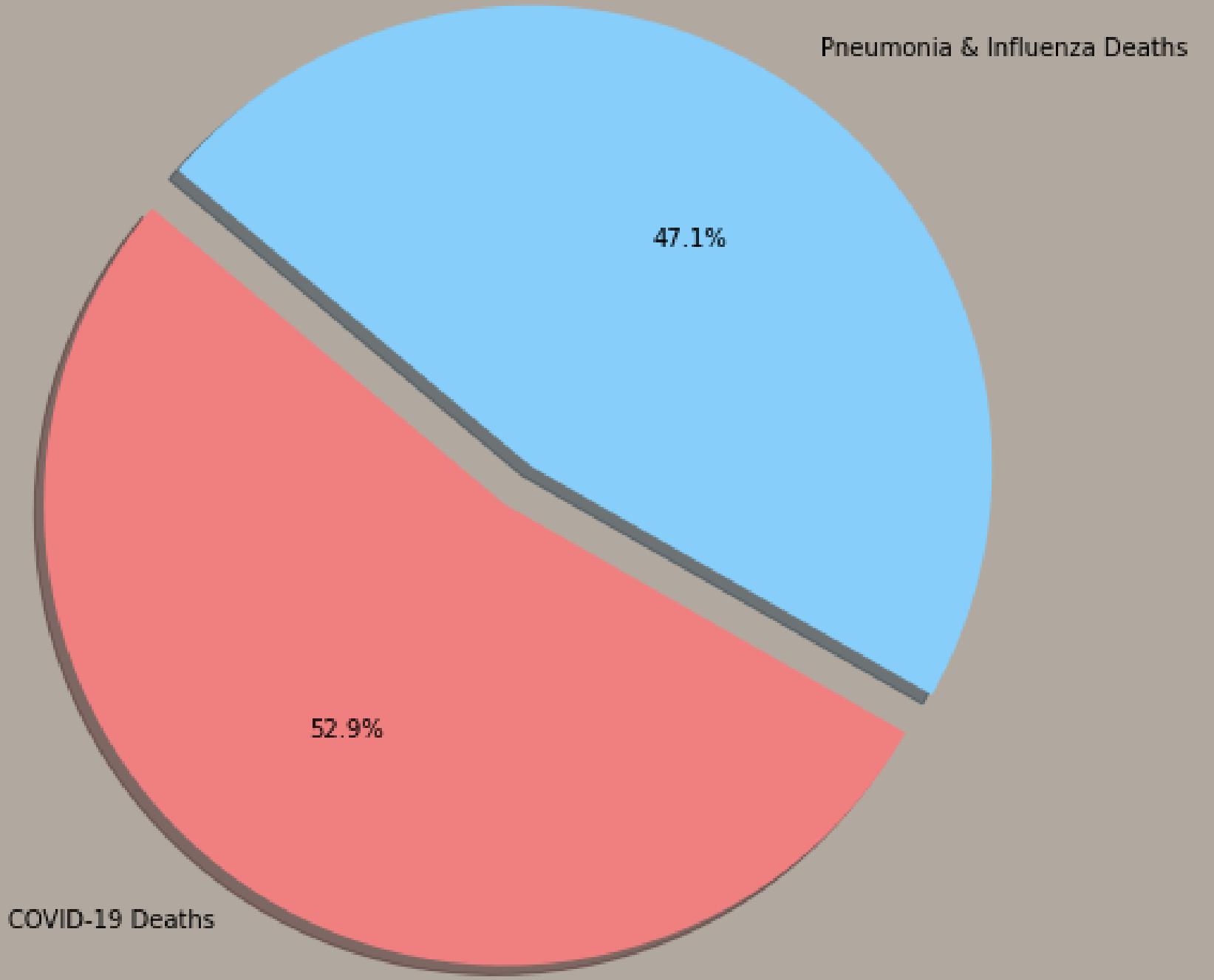






COVID-19 DEATH RATE ANALYSIS

Percentage of COVID-19 Deaths



Looking at flu, pneumonia, and COVID-19 deaths, the corona virus made up 52.9% of deaths from March 2020 - April 2022.

APRIL 2022



Let's explore some potential risk factors.



AGE

The dataset included a wide range of age groups across the lifespan.

LOCATION

The dataset allowed for exploration of death rates by state for COVID, pneumonia, the flu, and total cumulative deaths.

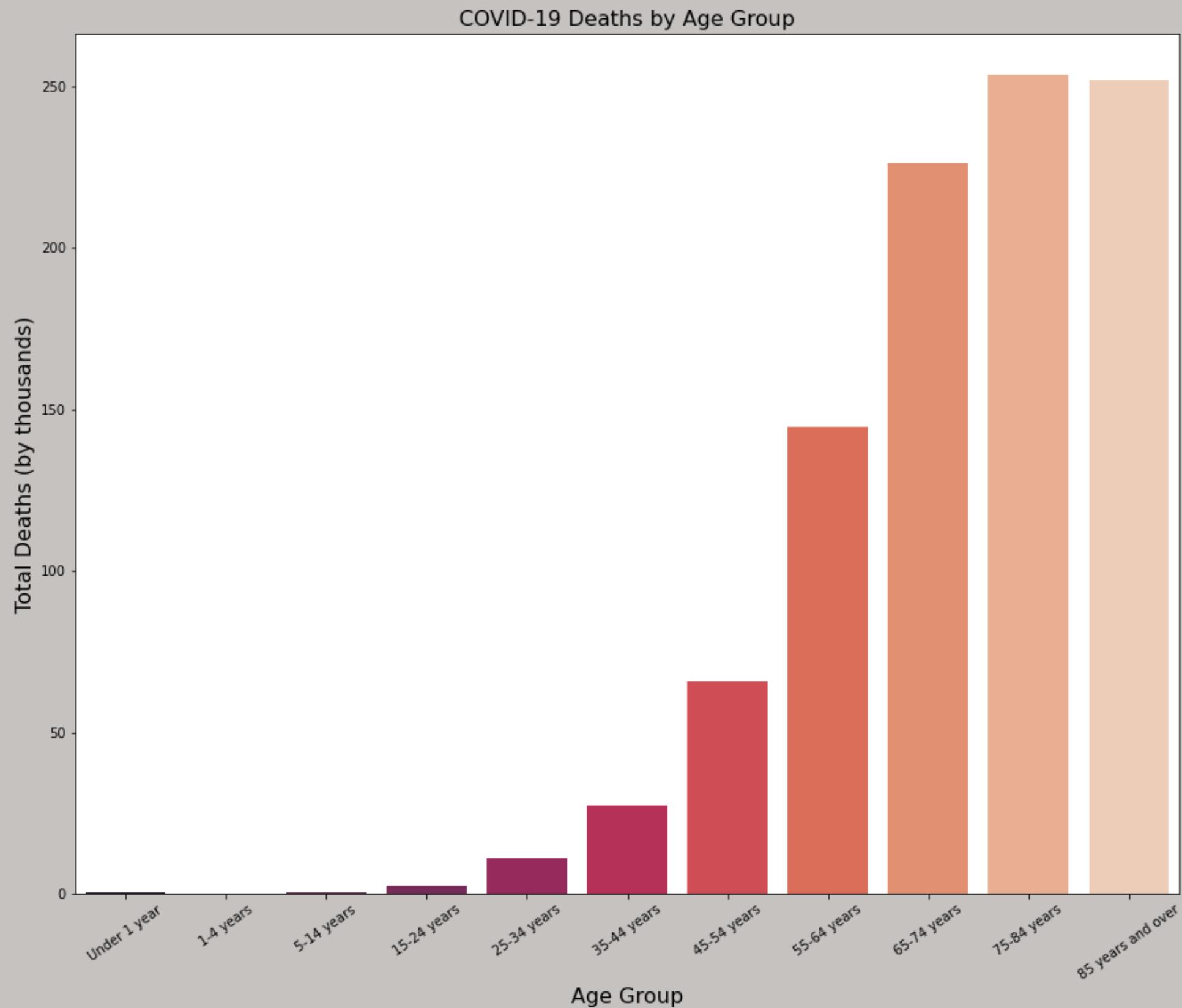
TIME OF YEAR

Seasons as well as each month were analyzed to visualize the rate of death by time of year.

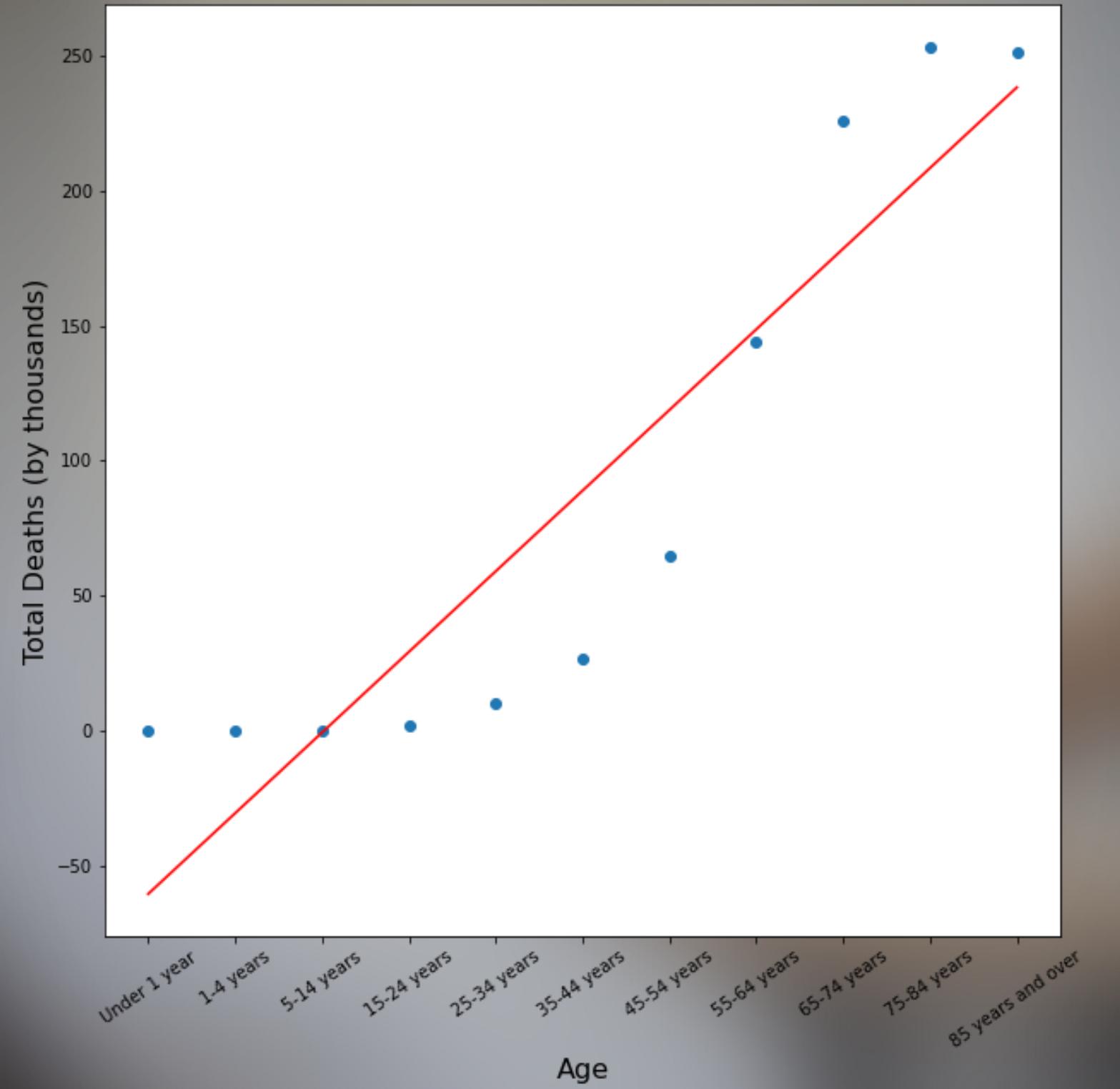
SEX

Male and female categories were utilized for the data visualization.

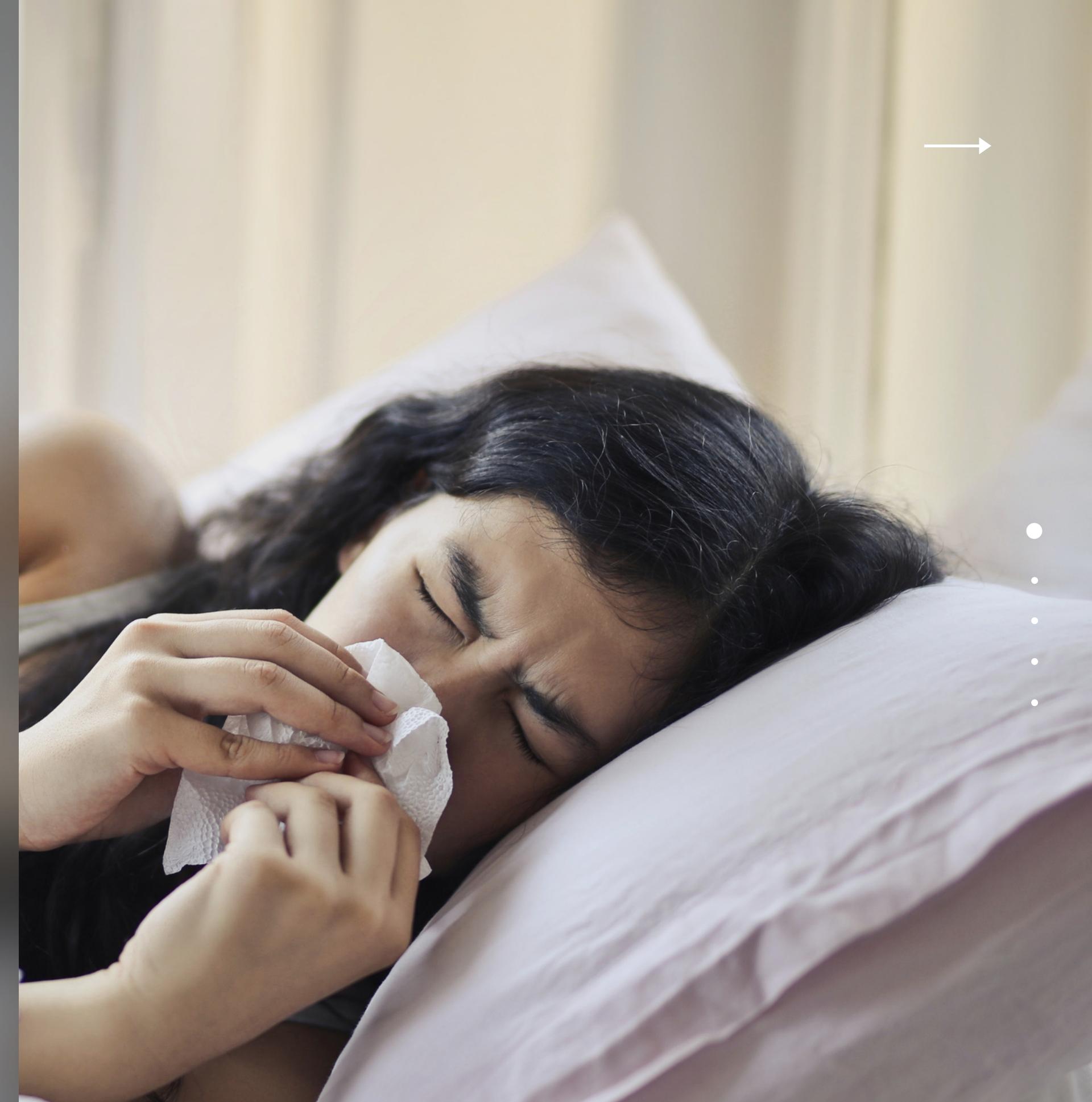
People between the age of 75-84 have the highest death rate.



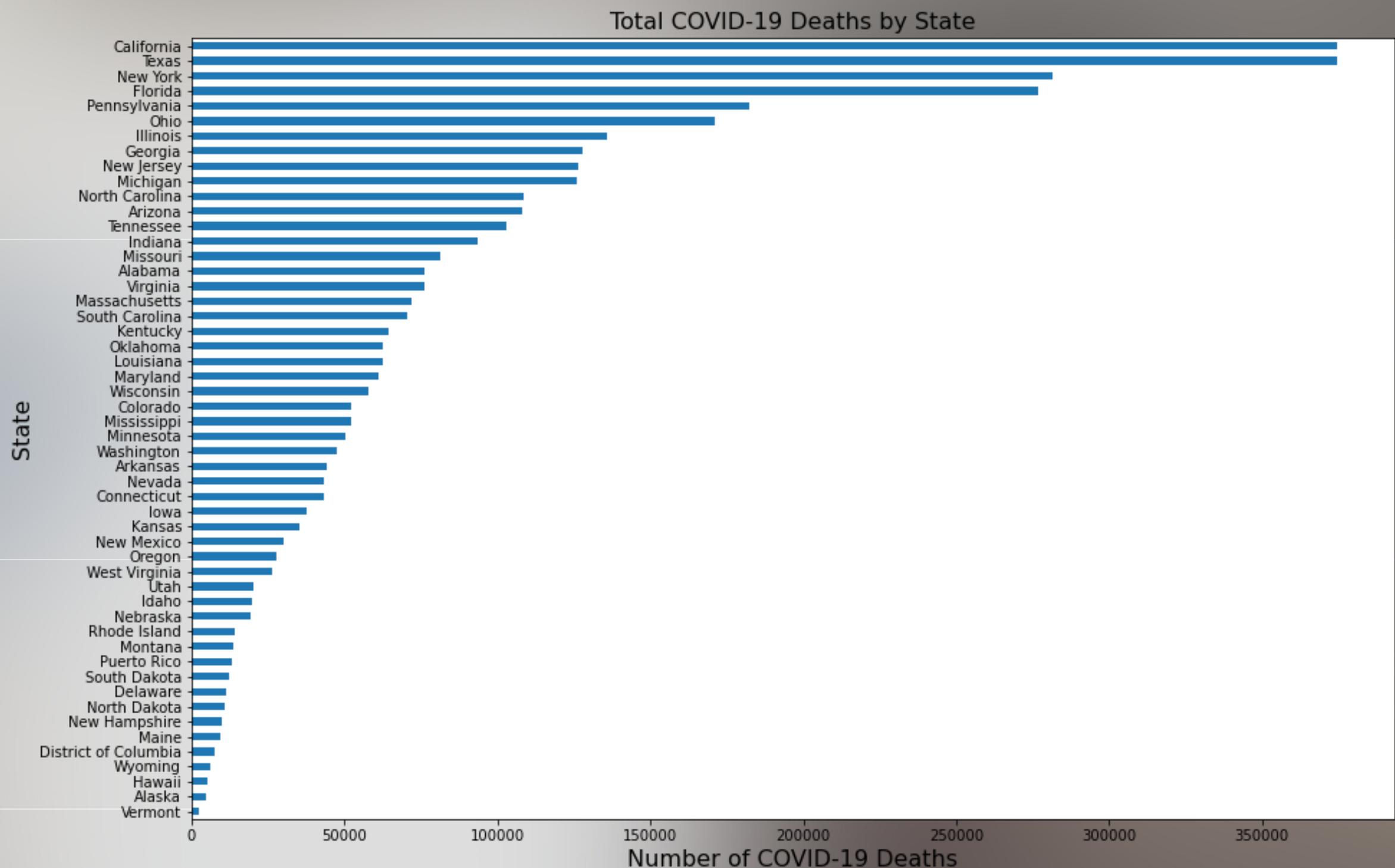
Age vs COVID-19 Deaths



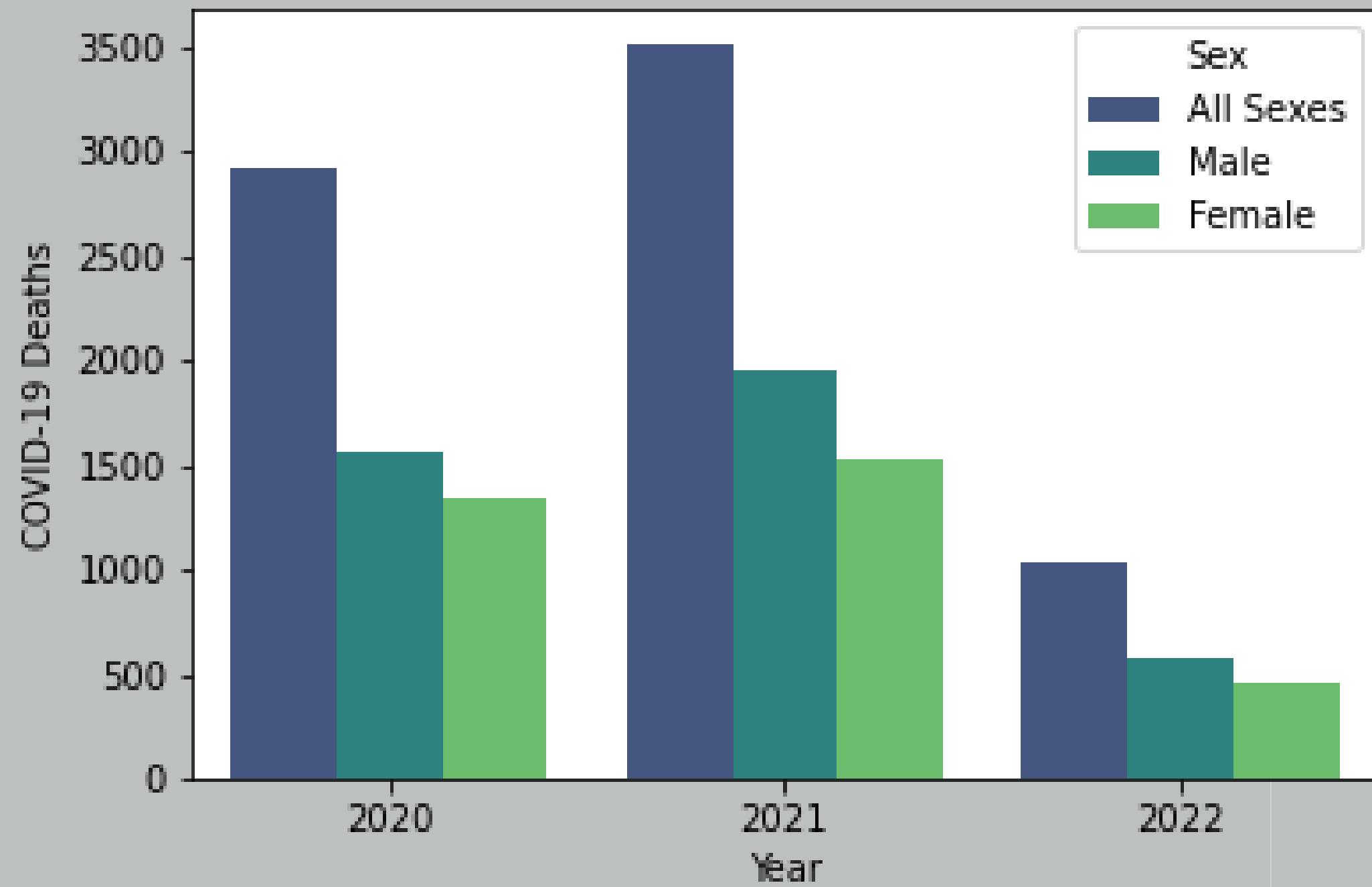
There is a strong correlation between death rate and age, suggesting the older you are, the higher your risk of death.



California, Texas, & New York have the highest death rate of COVID to date.



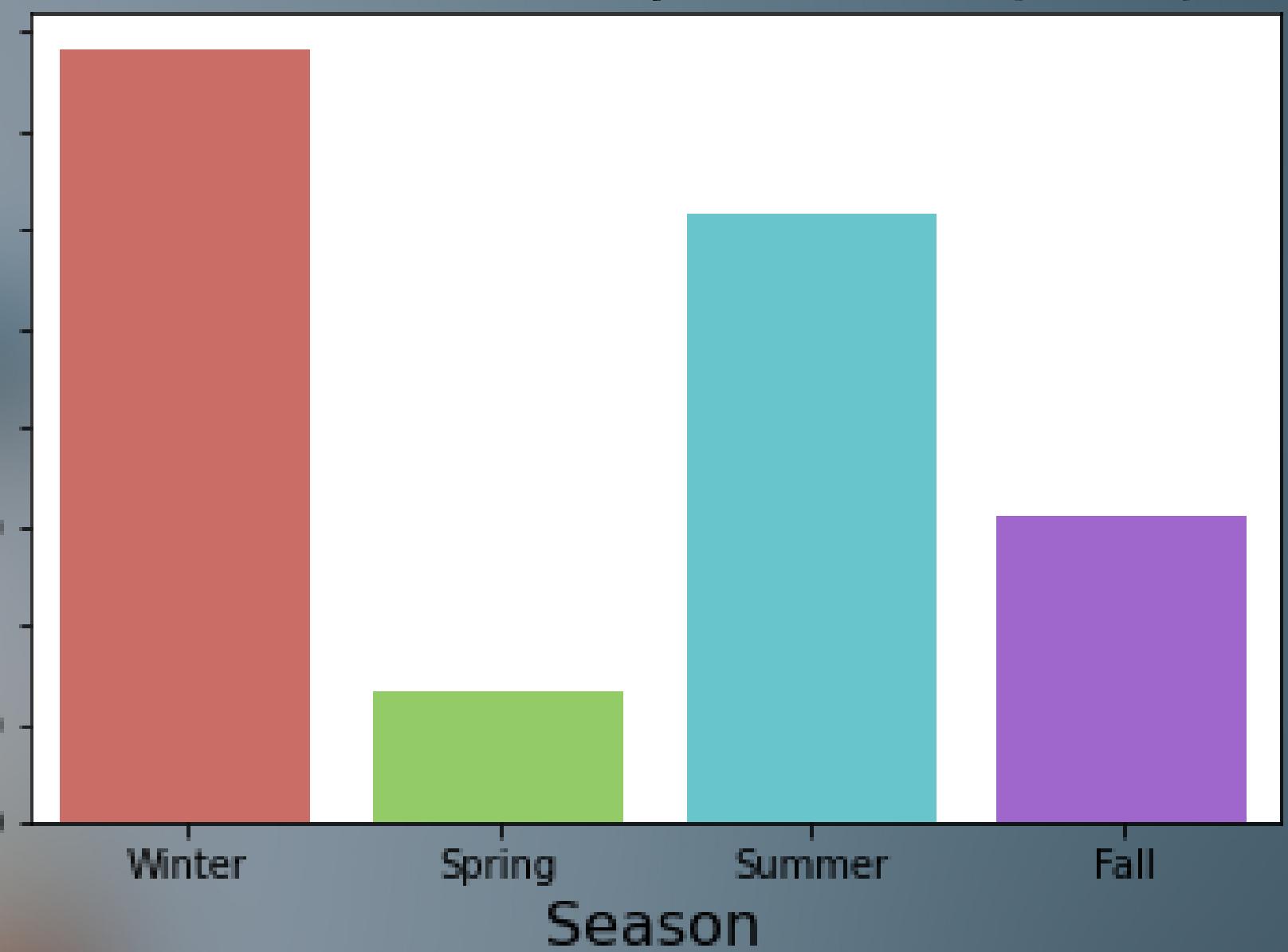
COVID-19 Deaths from 2020-2022



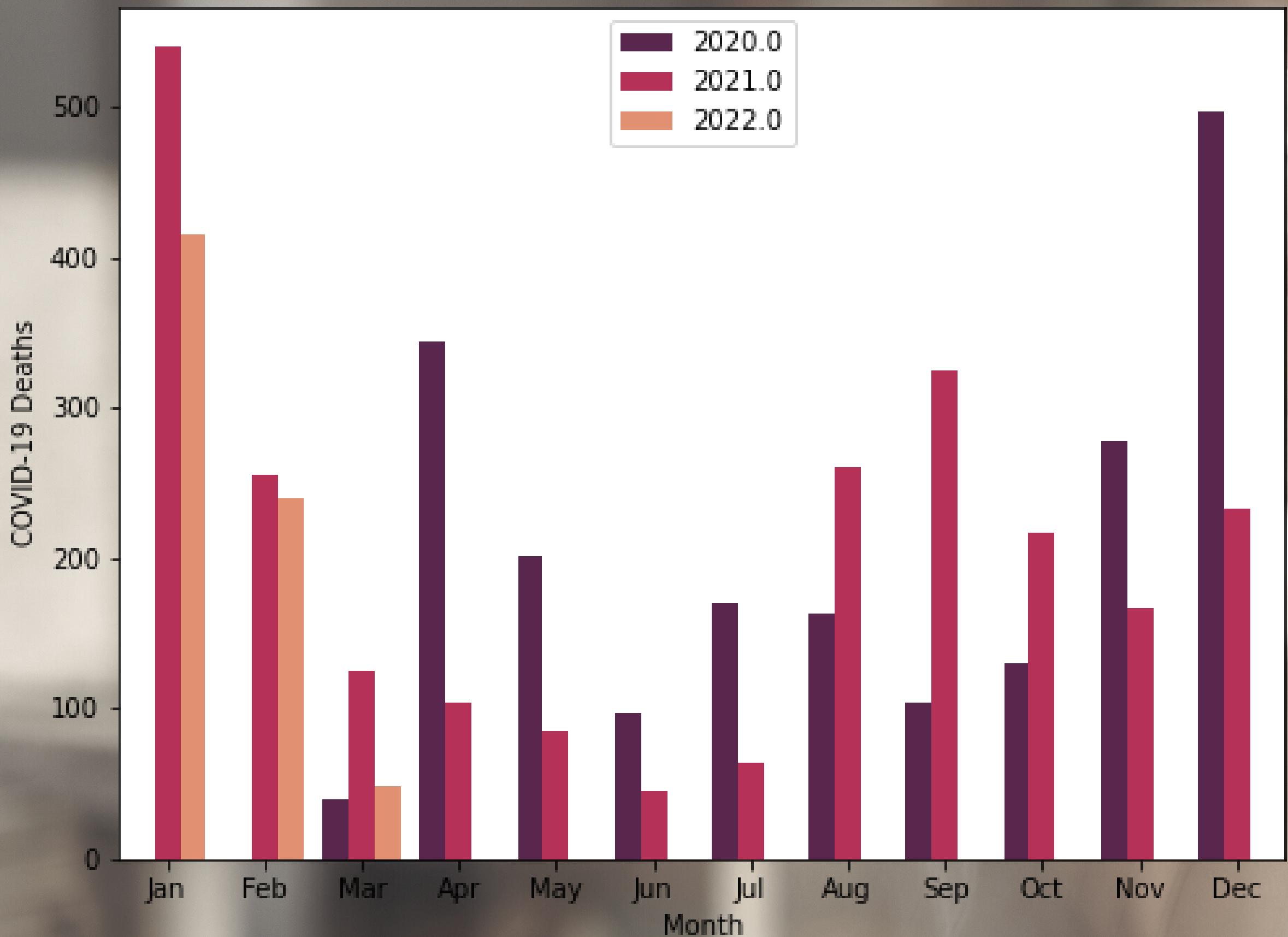


COVID-19 Deaths (by thousands)

COVID-19 Deaths per Season (2021)

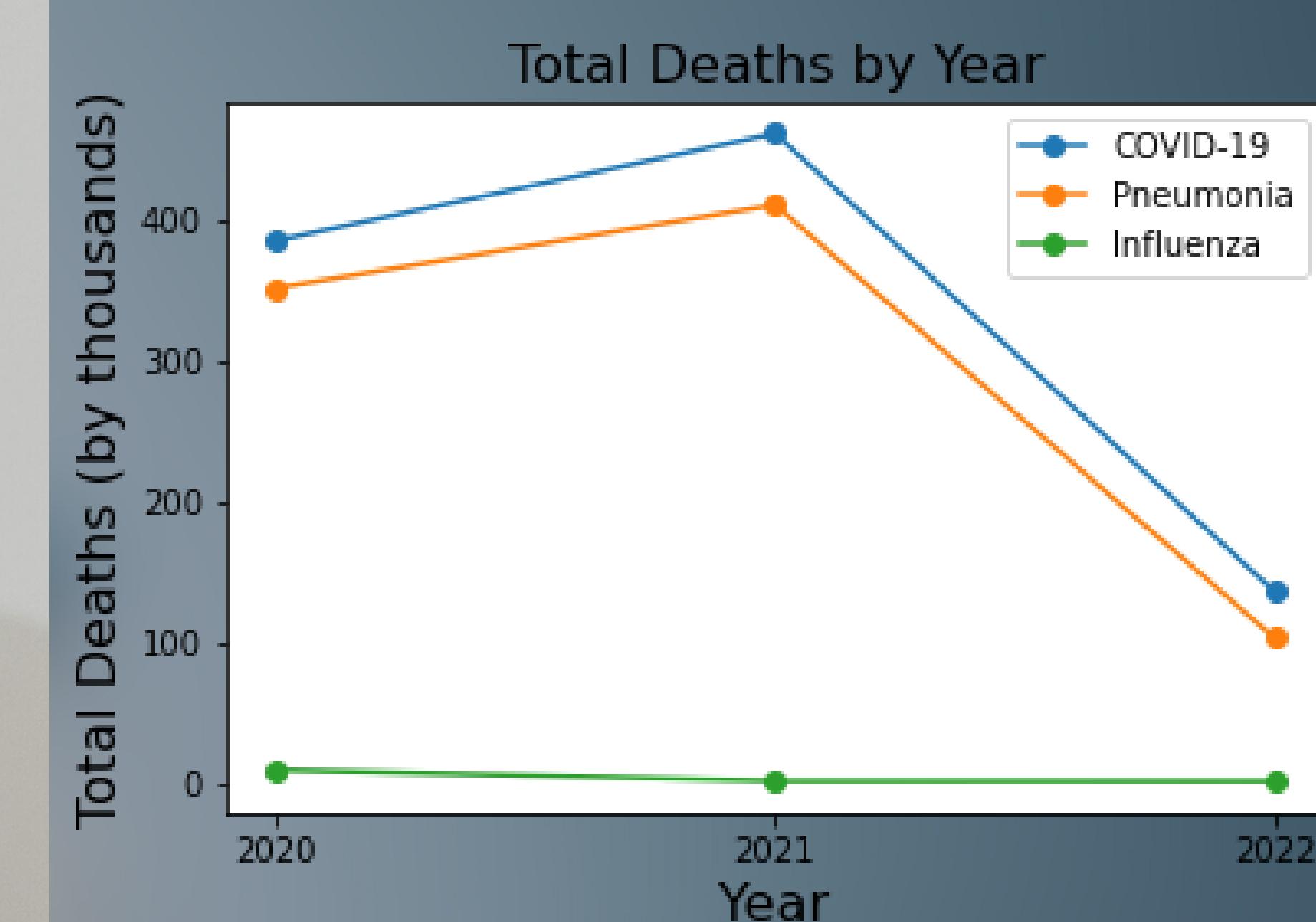


COVID-19 Deaths from 2020-2022 by Month



With the introduction of the COVID-19 vaccine, there has been a sharp, steady decline in both COVID and pneumonia death rates.





Influenza deaths have stayed steady, which is expected as there is a yearly flu vaccine to keep the death rate low.

Considerations for further investigation & limitations of analysis



Identification of demographic risk factors

Using machine learning, we can determine if your age, gender, and home state put you at higher risk of COVID death.

Predict future trends of data

By analyzing the trend of the data, there is a possibility to develop predictions of death rates in the years to come.

Comparison of US data to world data

Further exploration could include comparing the US data to similar developed countries COVID death rates.

2021 is the only year with data for 12 months.

Given the timeline of our pandemic, we are limited on the amount of data over time. Despite 2020 consisting of 10 months of COVID data, it may not be as robust given what we have learned about the disease over time.

Data does not consider vaccination status.

Vaccination status impacts COVID death outcomes. We also cannot assume there is/was equal access to vaccinations in all parts of the country.

DATA SOURCE:



GIT HUB:

