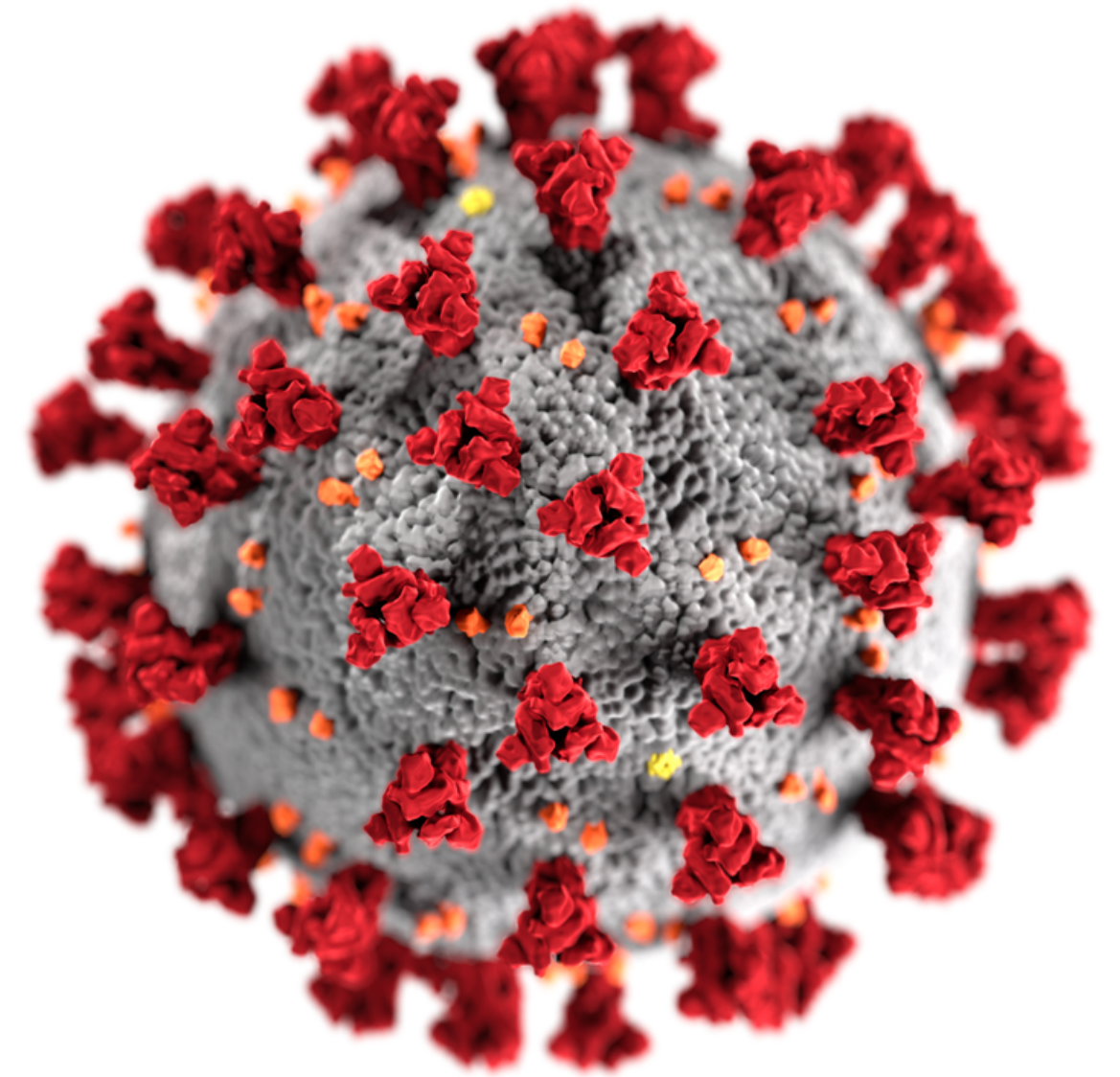
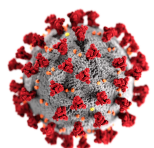


# COVID-19 ANALYSIS



# AGENDA

- 1 PROJECT OBJECTIVE
- 2 DATASET DESCRIPTION
- 3 ANALYSIS & VISUALIZATIONS
- 4 INSIGHTS
- 5 CONCLUSION

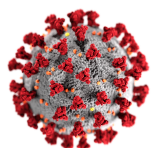


# OBJECTIVE

**Identify high risk areas for COVID-19 outbreaks & find potential solutions to reduce risk**

**Analyze mask-usage to identify compliance effects in high risk areas.**

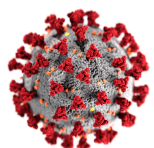
**Analyze COVID-19 vaccination trends between states.**



# THE DATASETS

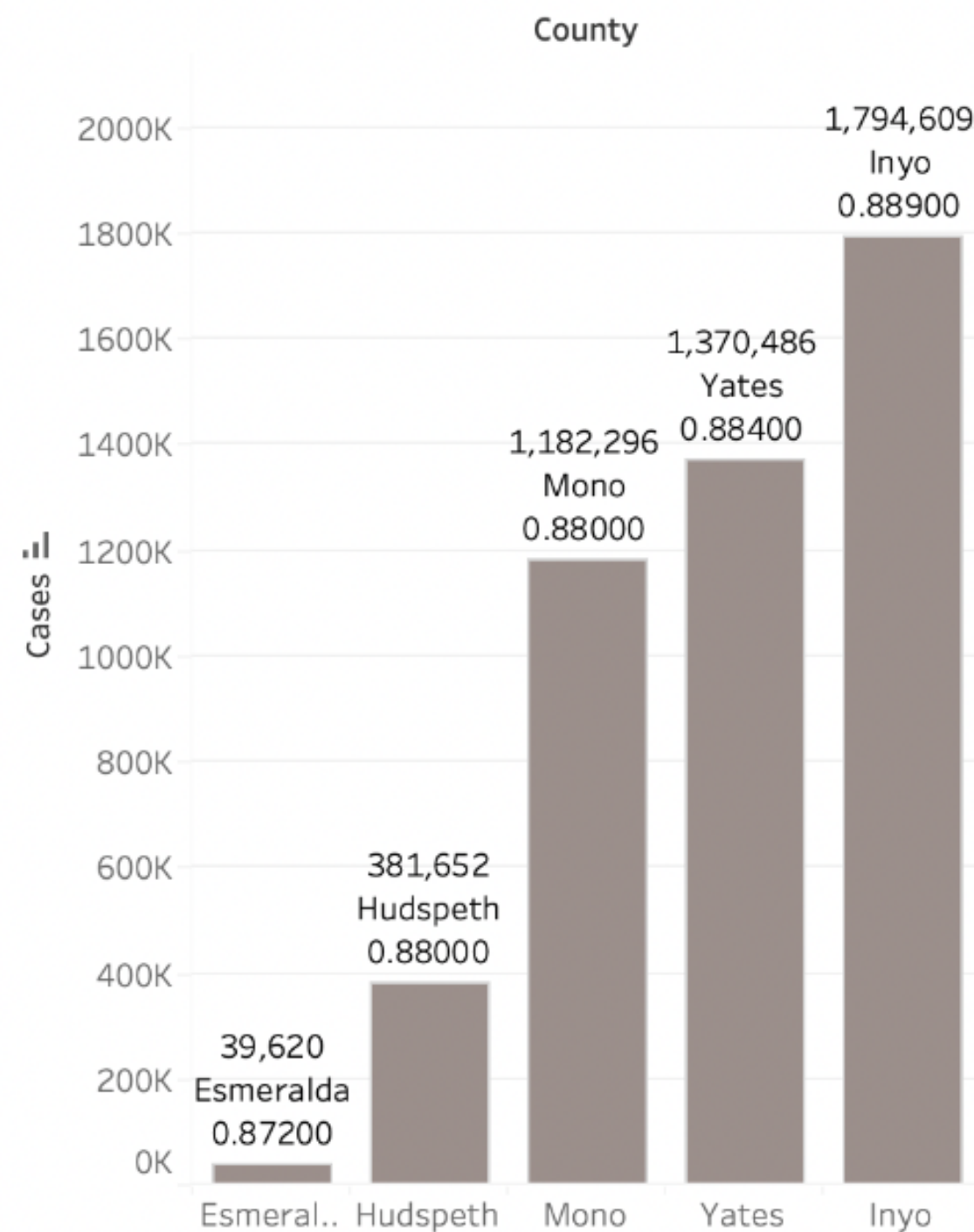
## Sources: Kaggle & Github

- masks: mask info 2022
- masks counties 2022: joined data of counties 2022 and mask info
- counties: joined dataset with county info 2022-2023
- testing: testing info based on state
- vaccine: vaccine info based on state
- vaccine\_ts: columns for vaccines for time series analysis
- testing\_ts: columns for testing for time series analysis
- ts\_df: joined vaccine\_ts and testing\_ts for time series analysis

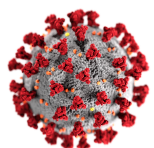


# TOP 5 COUNTIES FOR MASK USAGE ALWAYS

Top 5 Counties with Mask Usage as Always



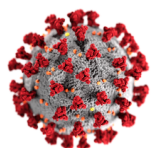
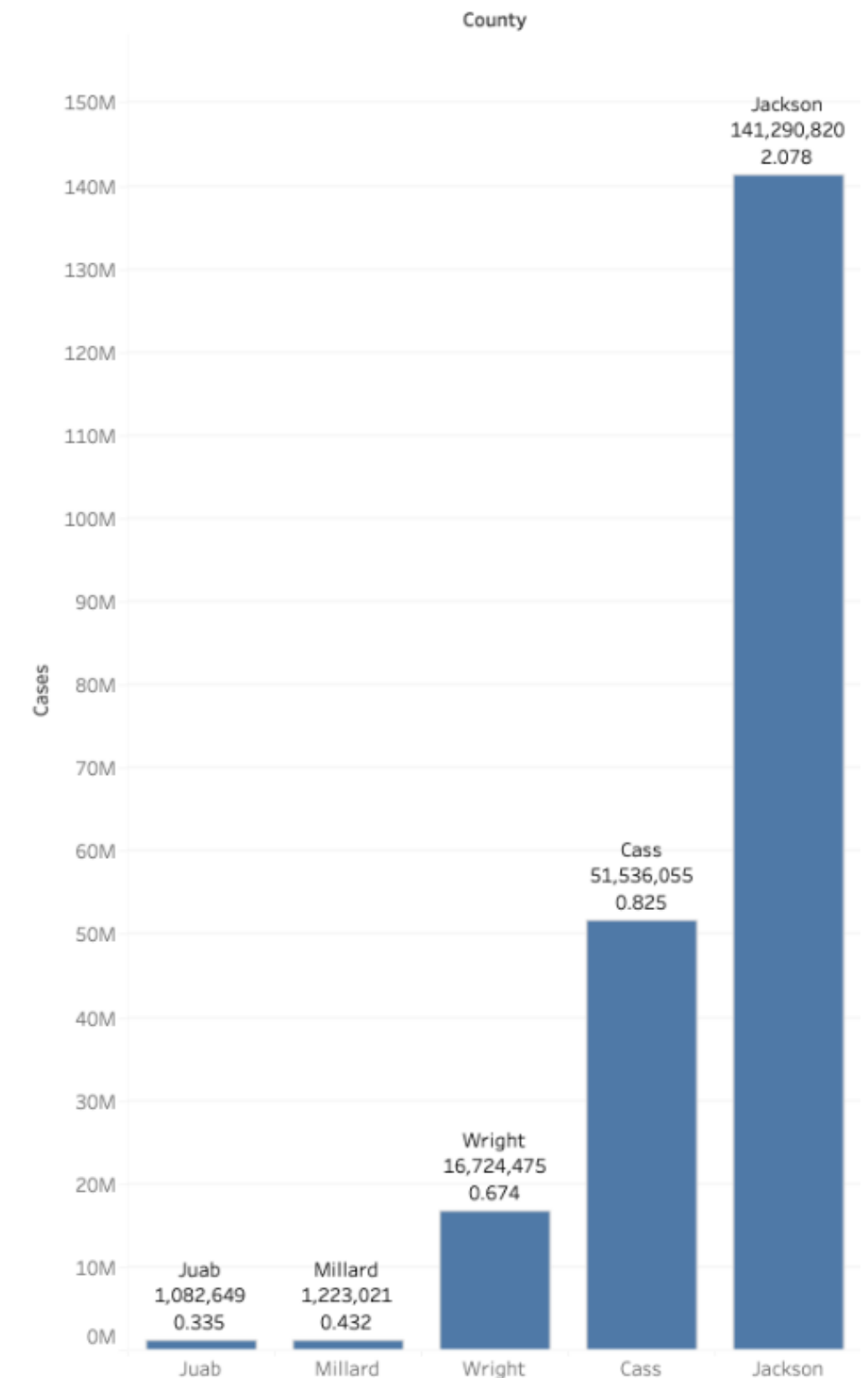
County	Always	Total Cases	% of Deaths
Inyo	0.889	1,794,609	1.51%
Yates	0.884	1,370,486	1.08%
Mono	0.880	1,182,296	0.23%
Hudspeth	0.880	381,652	1.67%
Esmeralda	0.872	39,620	3.33%



# TOP 5 COUNTIES FOR MASK USAGE NEVER

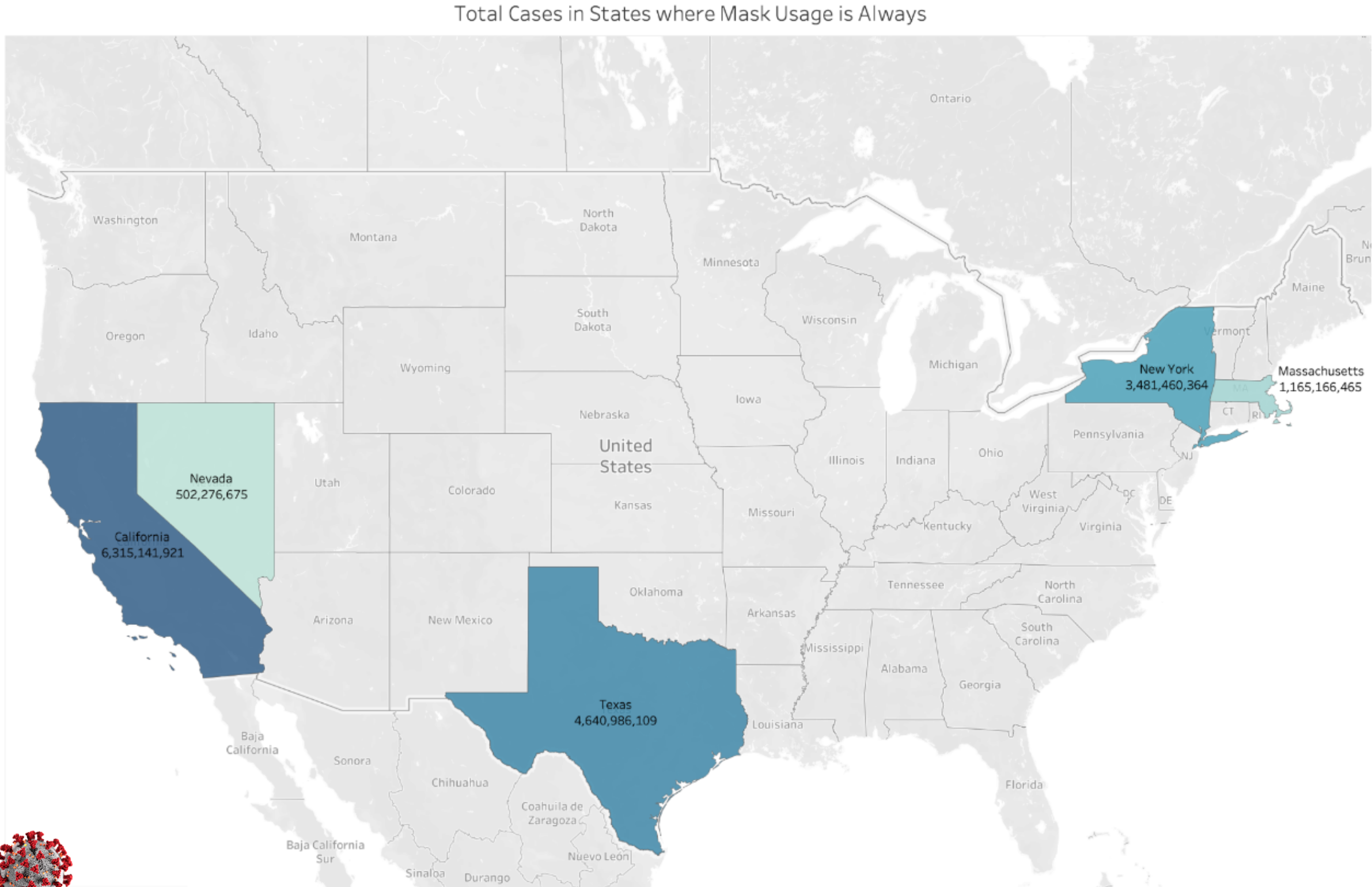
County	Never	Total Cases	% of Deaths
Jackson	0.325	826,389	0.76%
Cass	0.341	1,097,401	2.61%
Wright	0.419	1,465,156	2.12%
Millard	0.432	1,223,021	1.06%
Juab	0.335	1,082,649	0.84%

Top 5 Counties with Mask Usage as Never

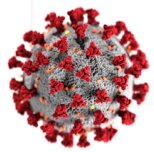




# TOTAL NUMBER OF CASES OF COVID-19 IN THE STATES FOR THE COUNTIES OF TOP 5 MASK USAGE ALWAYS



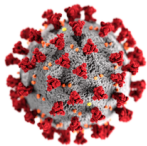
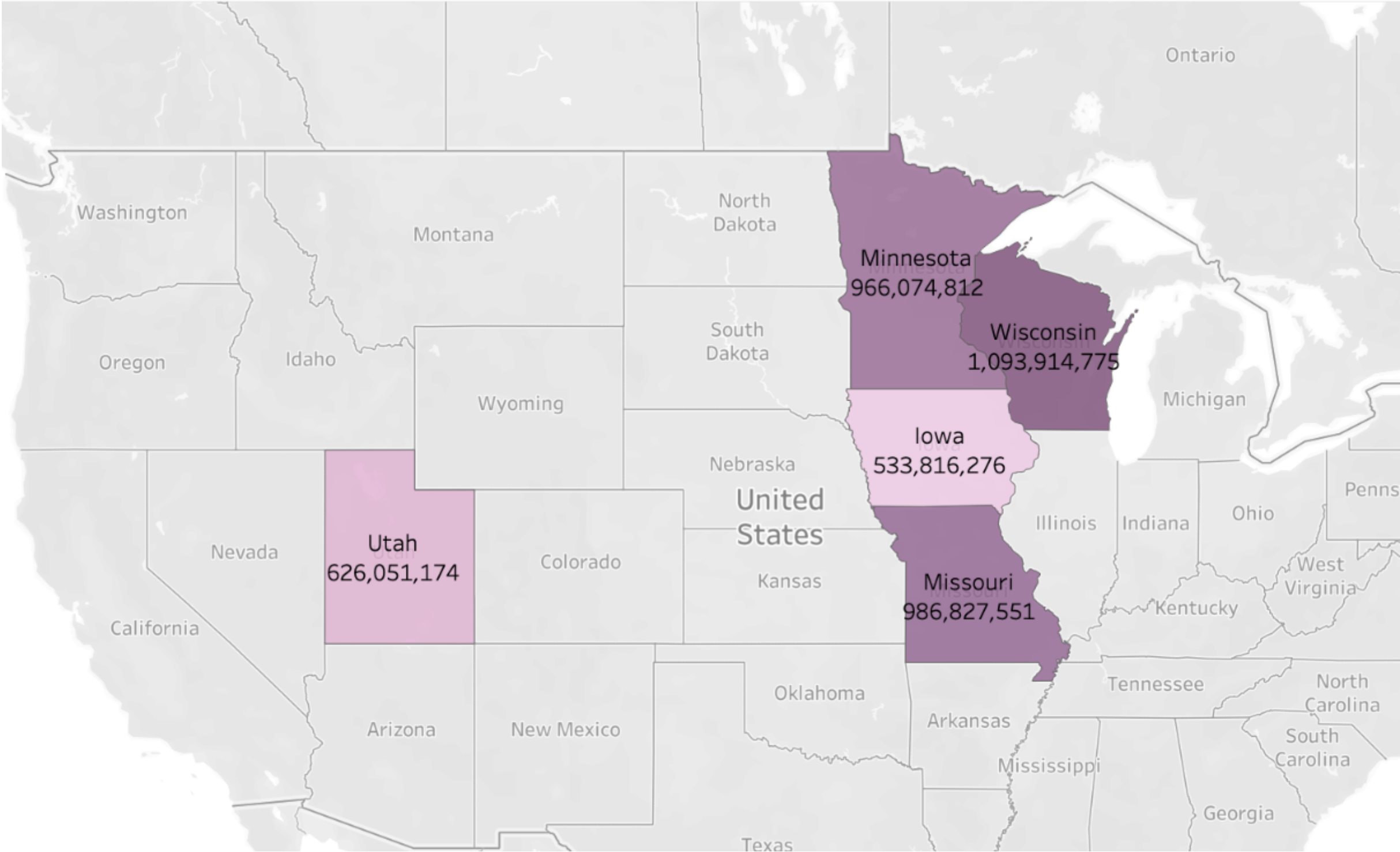
State	Total Cases
California	6,315,141,921
Texas	4,640,986,109
New York	3,481,460,364
Massachusetts	1,165,166,465
Nevada	502,276,675



# TOTAL NUMBER OF CASES OF COVID-19 IN THE STATES FOR THE COUNTIES OF TOP 5 MASK USAGE NEVER

State	Total Cases
Wisconsin	1,093,914,775
Missouri	986,827,551
Minnesota	966,074,812
Utah	626,051,174
Iowa	533,816,276

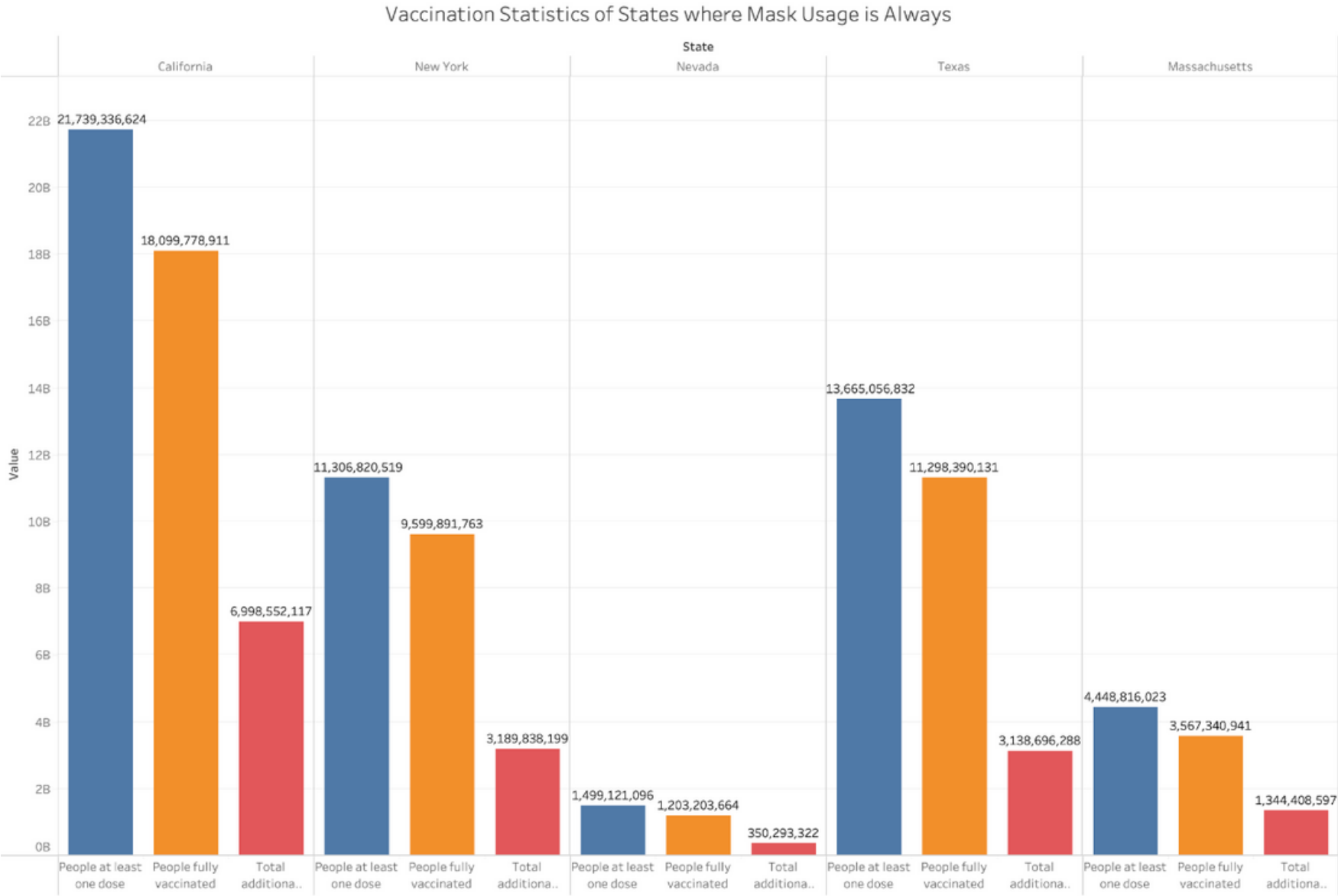
Total cases in States where Mask Usage is Never



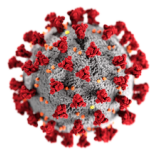


# VACCINATION STATISTICS FOR THE STATES OF TOP 5 COUNTIES

## WITH MASK USAGE - ALWAYS



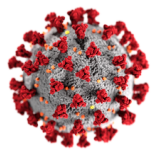
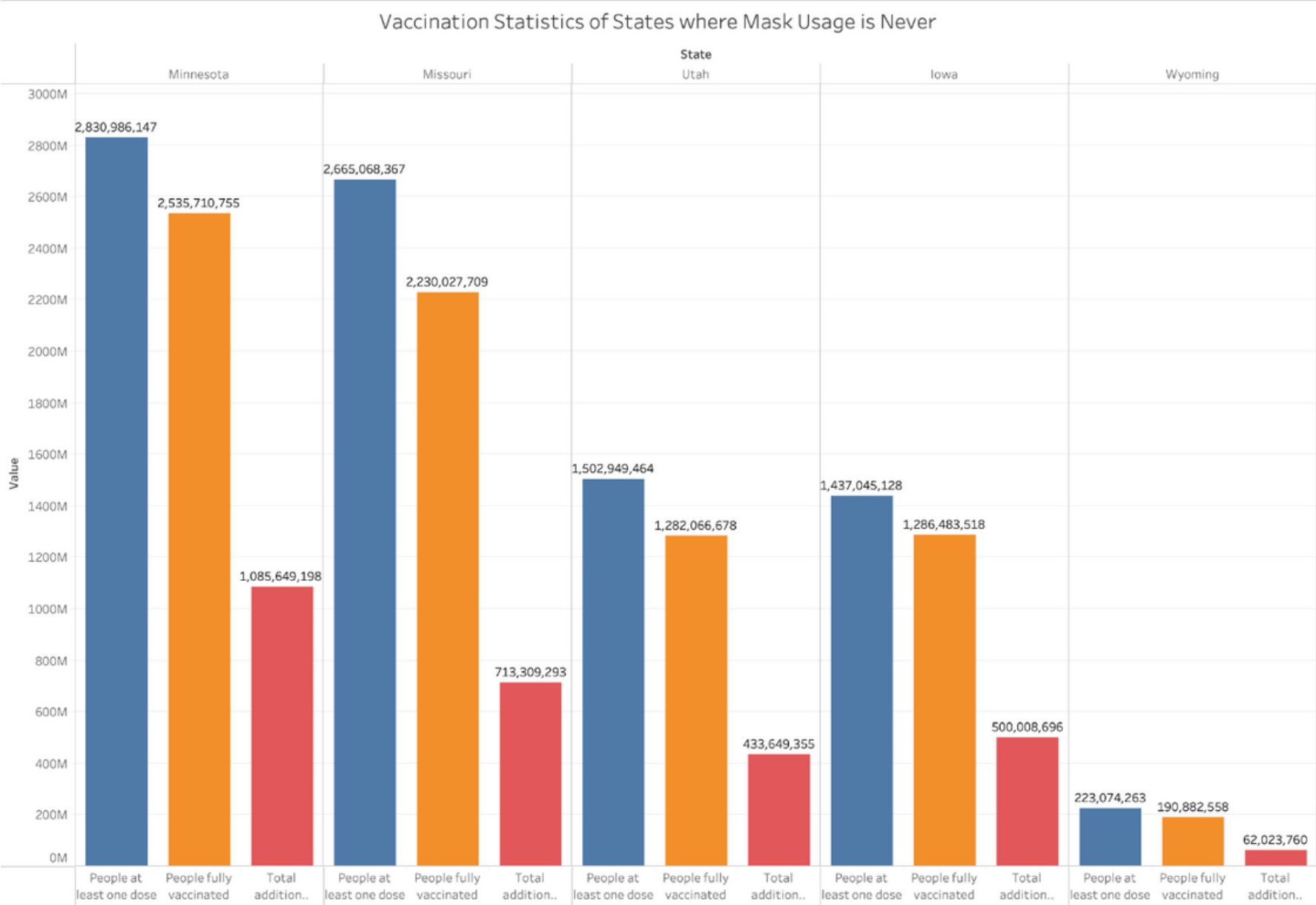
State	One Dose	Fully Vaccinated	Additional Doses
CA	21,739,336,624	18,099,778,911	6,998,552,117
NY	11,306,820,519	9,599,891,763	3,189,838,199
NV	1,499,121,096	1,203,203,664	350,293,322
TX	13,665,056,832	11,298,390,131	3,138,696,288
MA	4,448,816,023	3,567,340,941	1,344,408,597



# VACCINATION STATISTICS FOR THE STATES OF TOP 5 COUNTIES

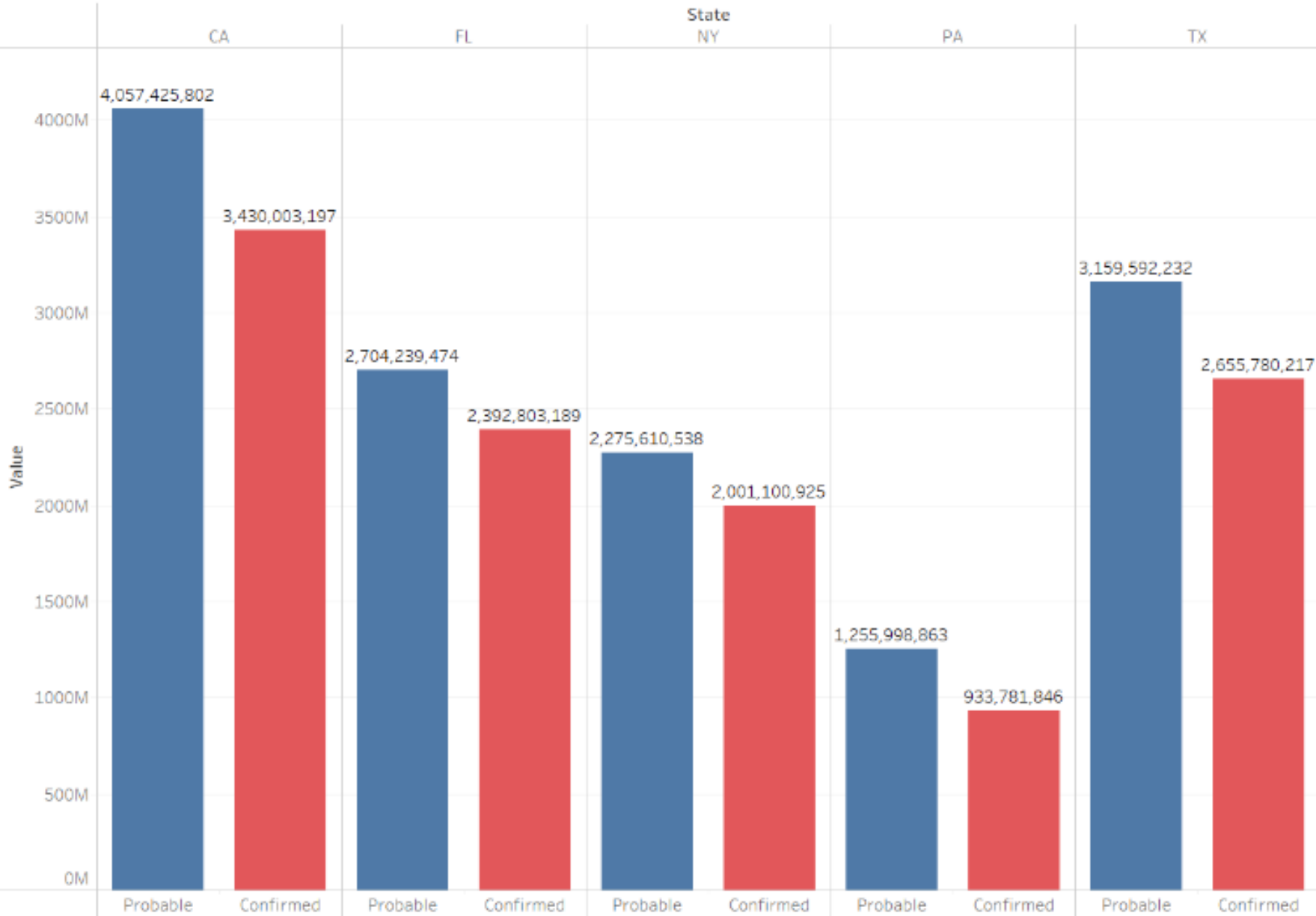
## WITH MASK USAGE - NEVER

State	One Dose	Fully Vaccinated	Additional Doses
MN	2,830,986,147	2,535,710,755	1,085,649,198
MO	2,665,068,367	2,230,027,709	713,309,293
UT	1,502,949,464	1,282,066,678	433,649,355
IA	1,437,045,128	1,286,483,518	500,008,696
WY	223,074,263	190,882,558	62,023,760

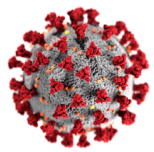
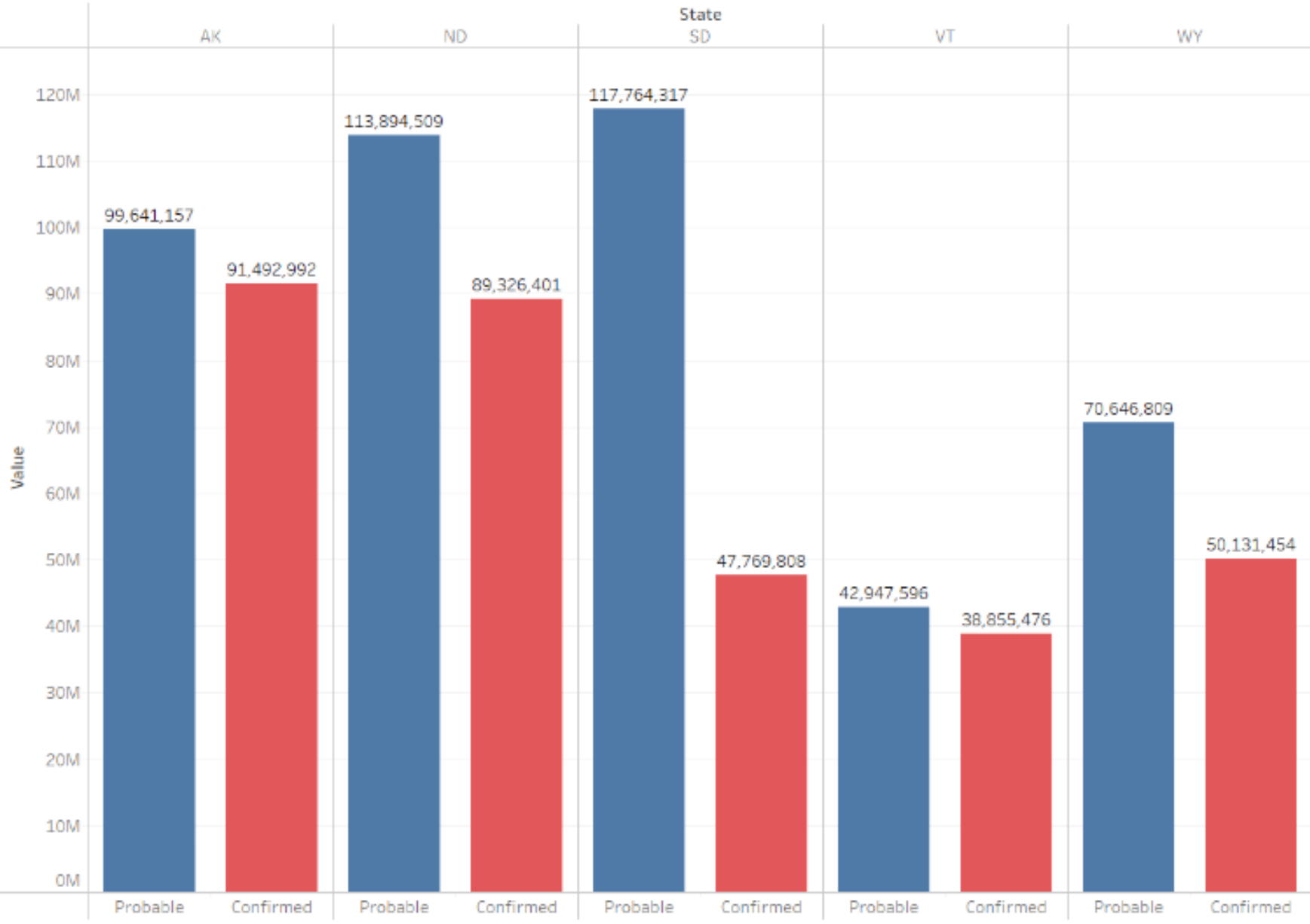


# POSITIVE COVID-19 CASES IN STATES WITH LARGER POPULATION VS. STATES WITH A SMALLER POPULATION

COVID-19 Statistics of States with Highest Population

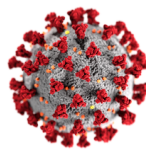
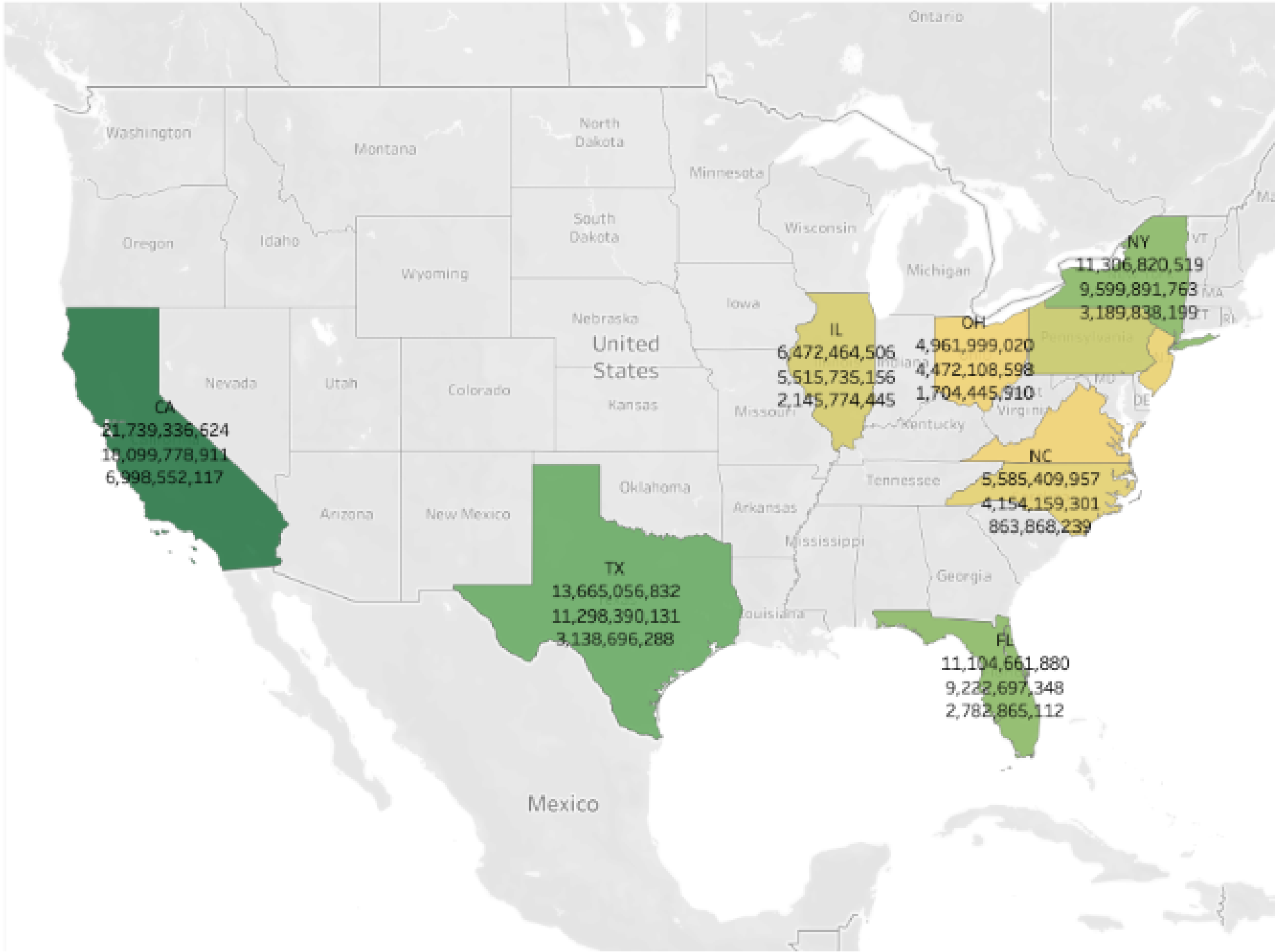


COVID-19 Statistics of States with Lowest Population



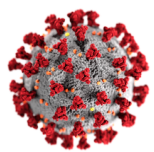
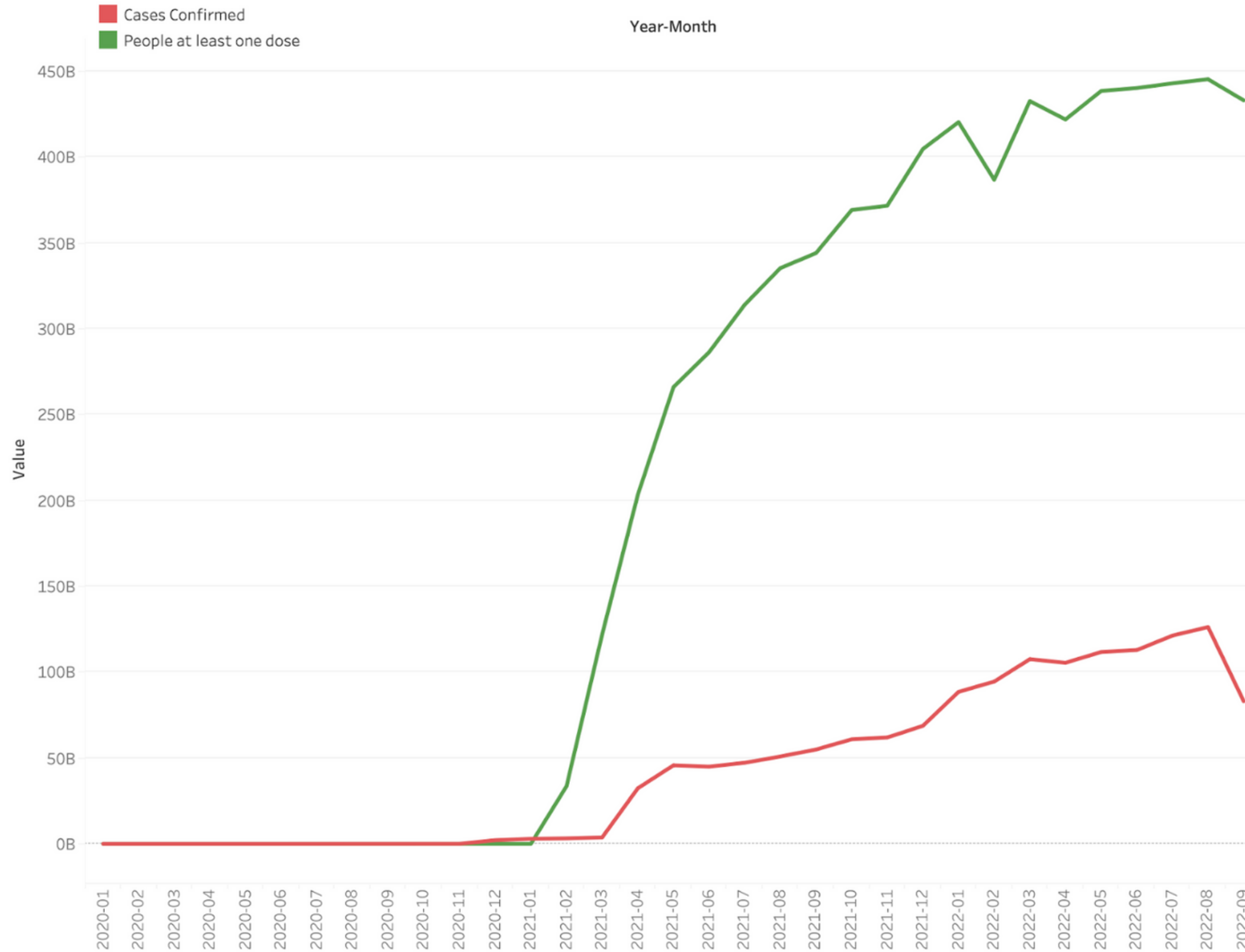
# CORRELATION OF MASK USAGE AND VACCINATION RATES

Correlation of Mask Usage with Vaccination Rates



# TIME-SERIES ANALYSIS

Vaccination and COVID-19 Cases Trend





# INSIGHTS & CONCLUSION

Higher vaccination rates gradually help mitigate the risk of COVID-19.

Highly populated states have a lot of people traveling into and out of the state itself, which explains high infection rates within those states.

Taking into account population differences, on average the death percentages are higher in areas with less mask usage.

States that are more likely to always wear masks are also more likely to get vaccinated.

