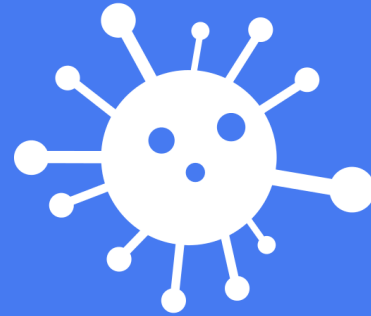

COVID-19: Impact on Vaccination



Team: 4Horsemen

CONTENTS

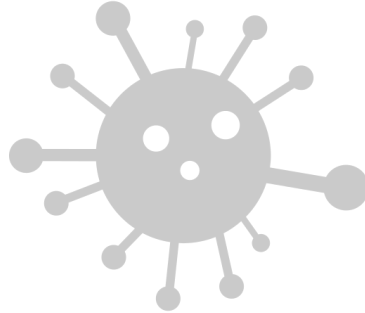
1. COVID-19 in US: An Overview
 - a. Cases
 - b. Deaths
2. Our Objective
 - a. Identify problem areas
 - i. High no. of Cases
 - ii. High no. of Deaths
 - b. Identify areas of high potential risk
 - i. Social Vulnerability Index (SVI)
 - ii. CVAC
 - c. Identify potential areas of inhibition
 - i. Hesitancy of vaccination
 - d. Recommend solutions

01

COVID-19 in US: An Overview

30,462,210

Confirmed
Cases*

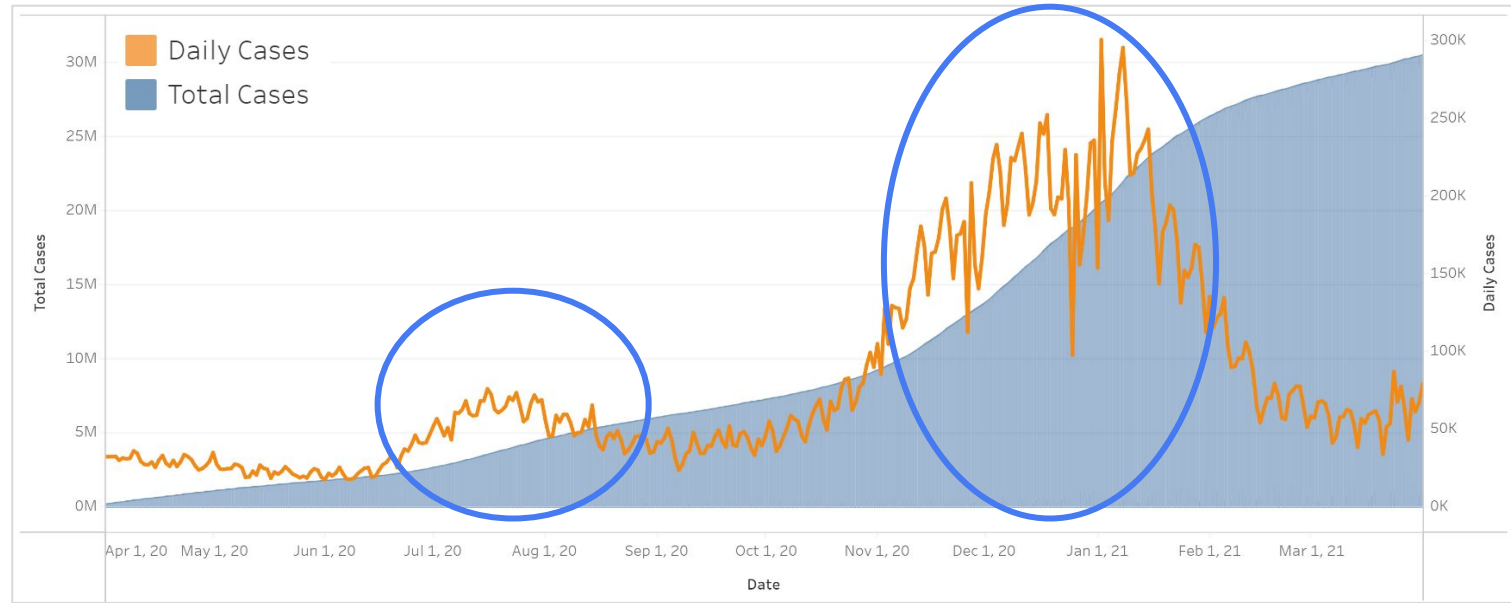


Confirmed
Deaths*

552,352

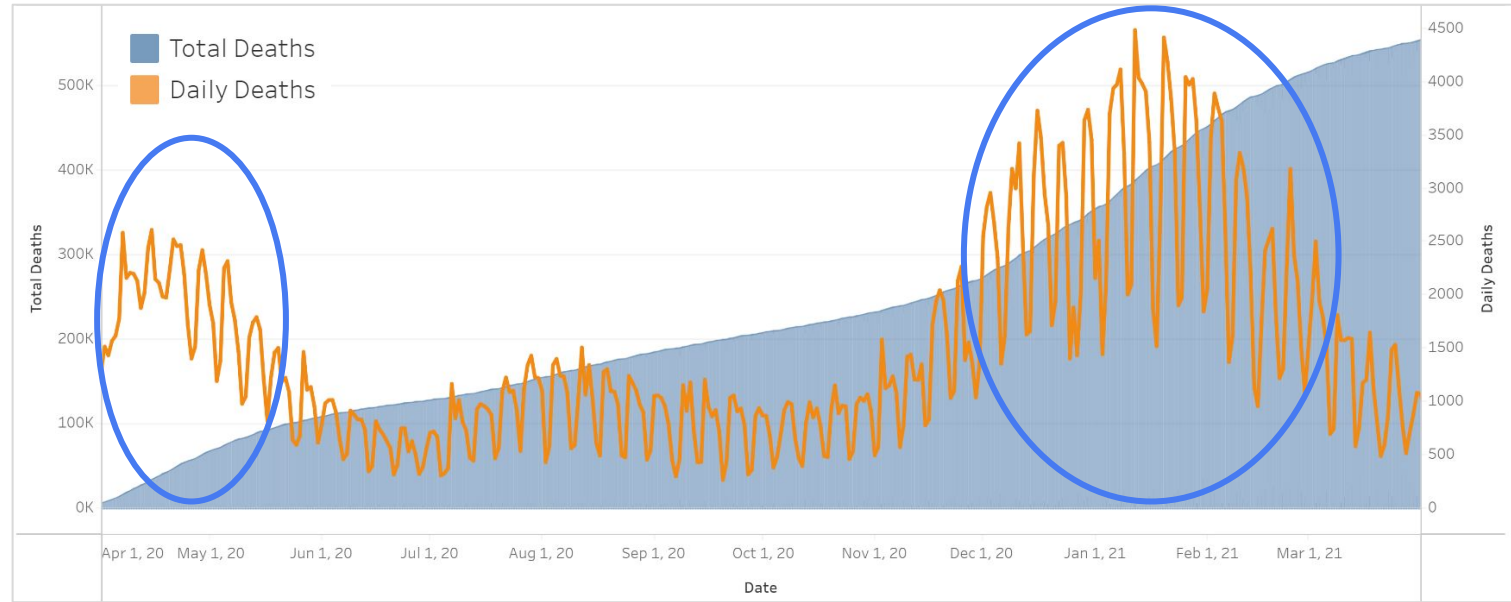
* Based on data till 03/31/2021 from John Hopkins University

Daily and Total Cases in US



- The highest number of daily cases were recorded in US in the month of January 2021
- The first wave of COVID 19 cases was observed in July - August 2020 followed by a much larger second wave in December 2020 - January 2021

Daily and Total Death in US

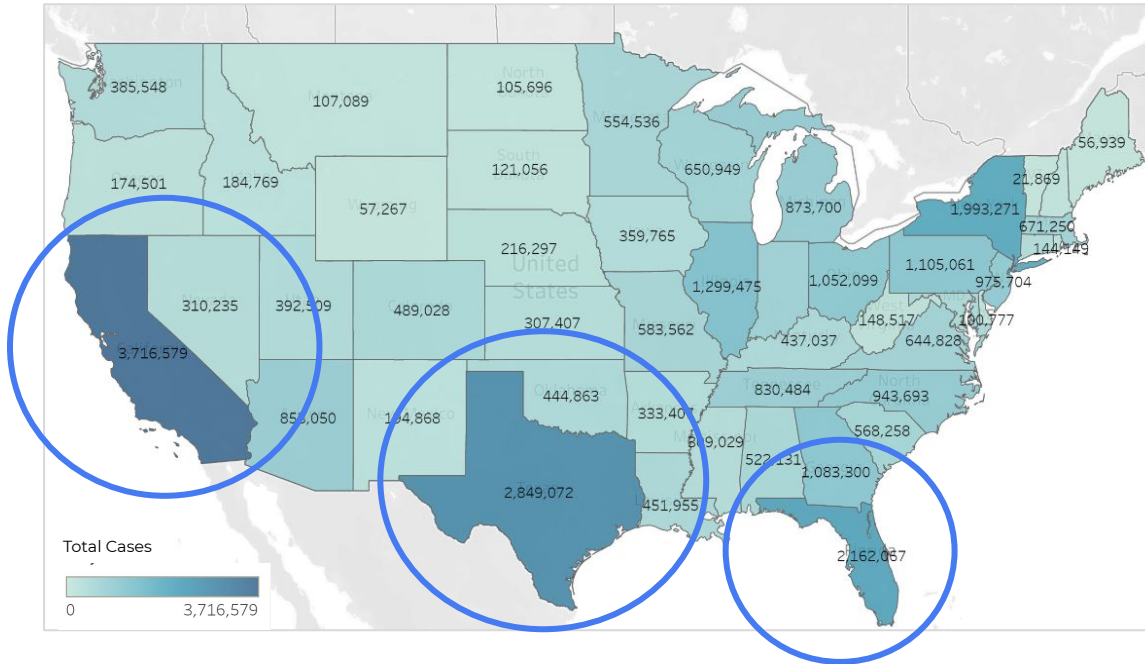


- The highest number of daily deaths were recorded in US in the month of January 2021
- The first wave of COVID 19 deaths was observed in April - May 2020 followed by a much larger second wave in December 2020 - February 2021

02-a

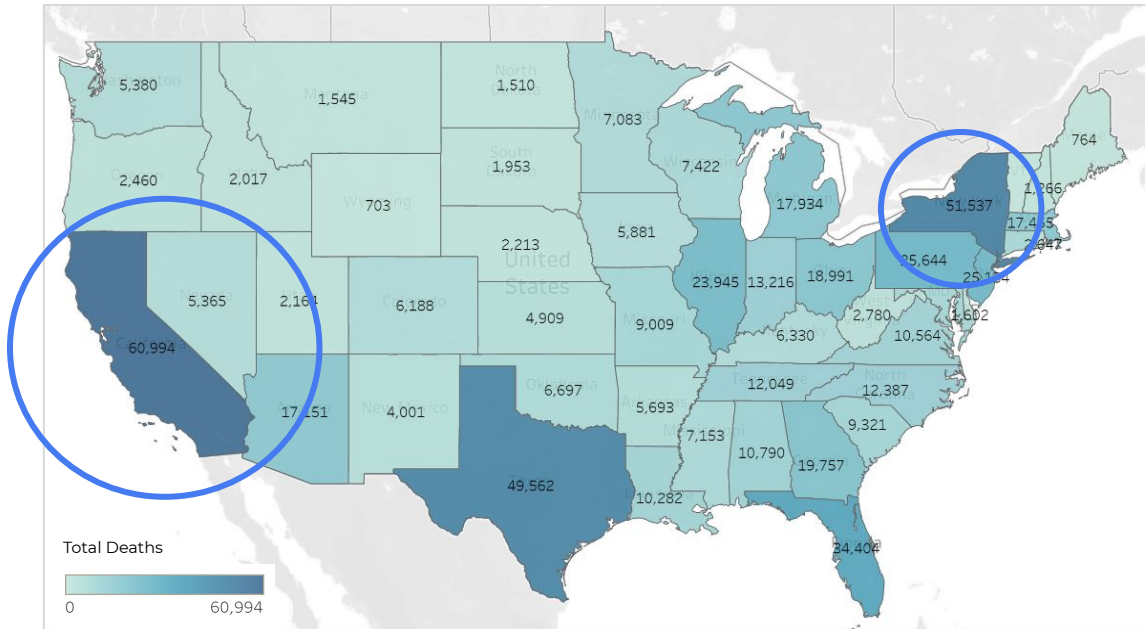
Identifying problem areas

COVID Impact - Total Number of Cases



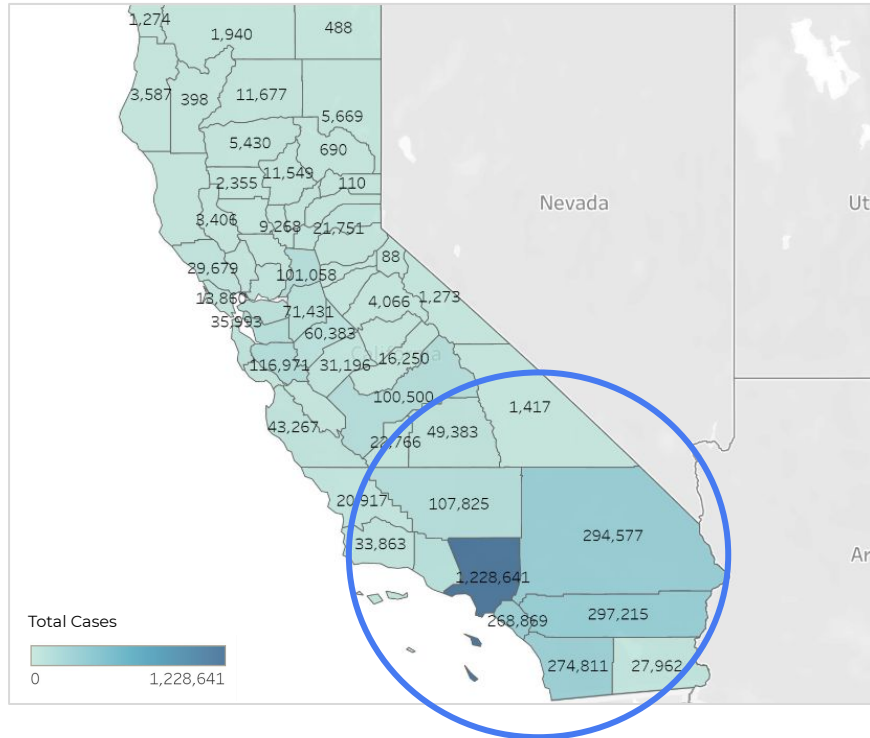
- Among all states in the US highest number of cases was recorded in California to date
- The states which recorded the second and third highest cases to date were Texas and Florida respectively

COVID Impact - Total Number of Deaths



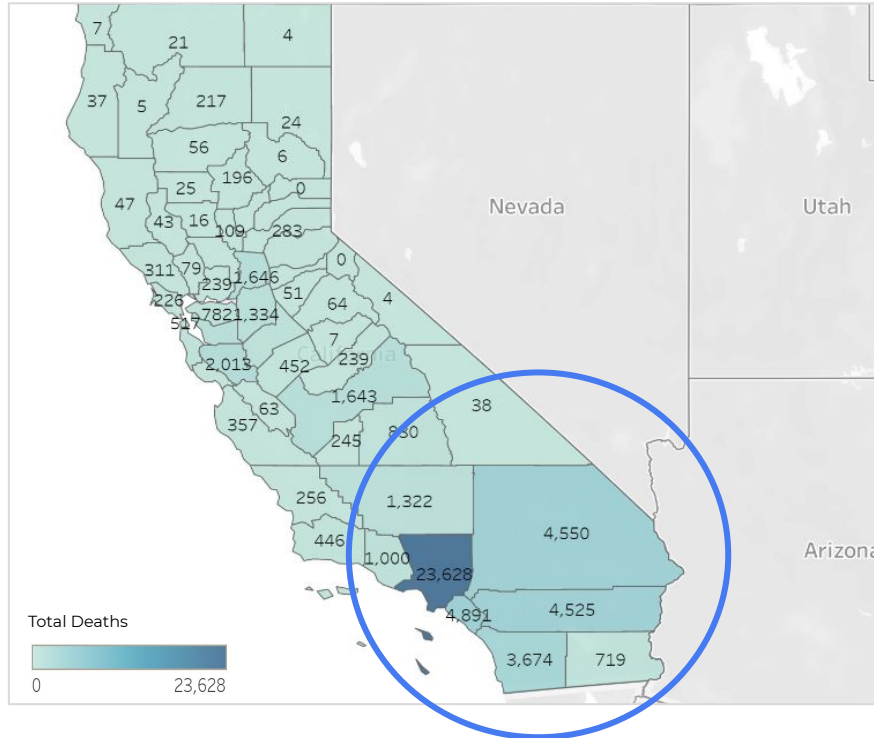
- Among all states in the US a high number of deaths was also recorded in California
- Even though New York recorded the fourth-highest number of total cases, in terms of total deaths it was second

Total Number of Cases - A Closer view of California



- Los Angeles County recorded the highest number of cases to date in California, almost one-third of total cases in California
- Most of the cases in California state were recorded in southern counties

Total Number of Deaths - A Closer view of California

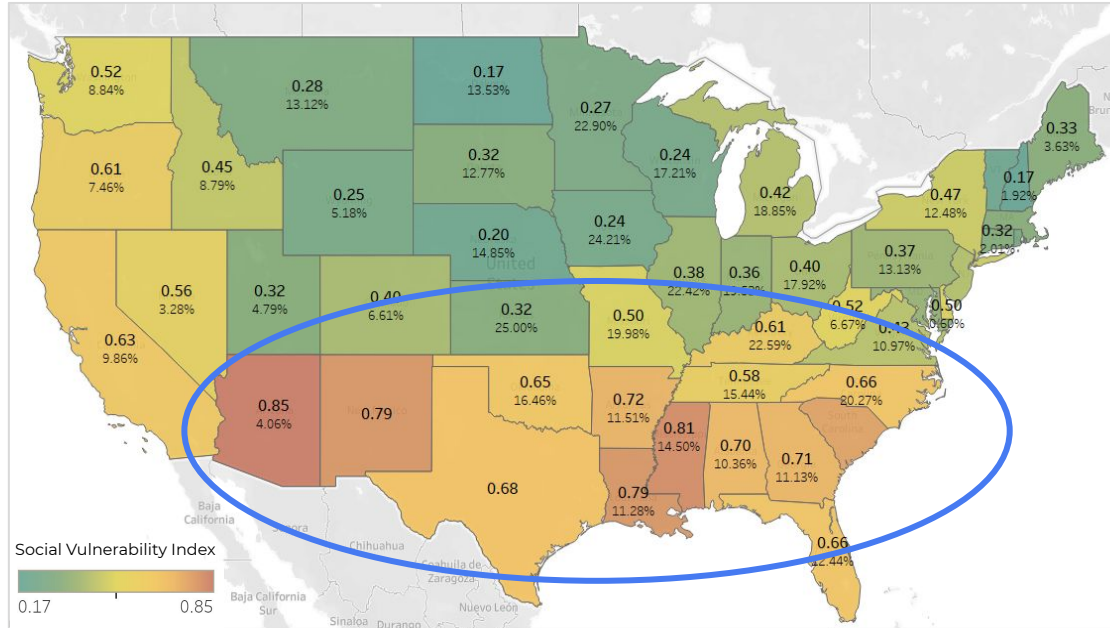


- Los Angeles County also recorded the highest number of deaths to date in California, almost one-third of total deaths in California
- A similar trend was observed in deaths as well with most cases being observed for southern counties only in California state

02-b

**Identifying areas of high
potential risk**

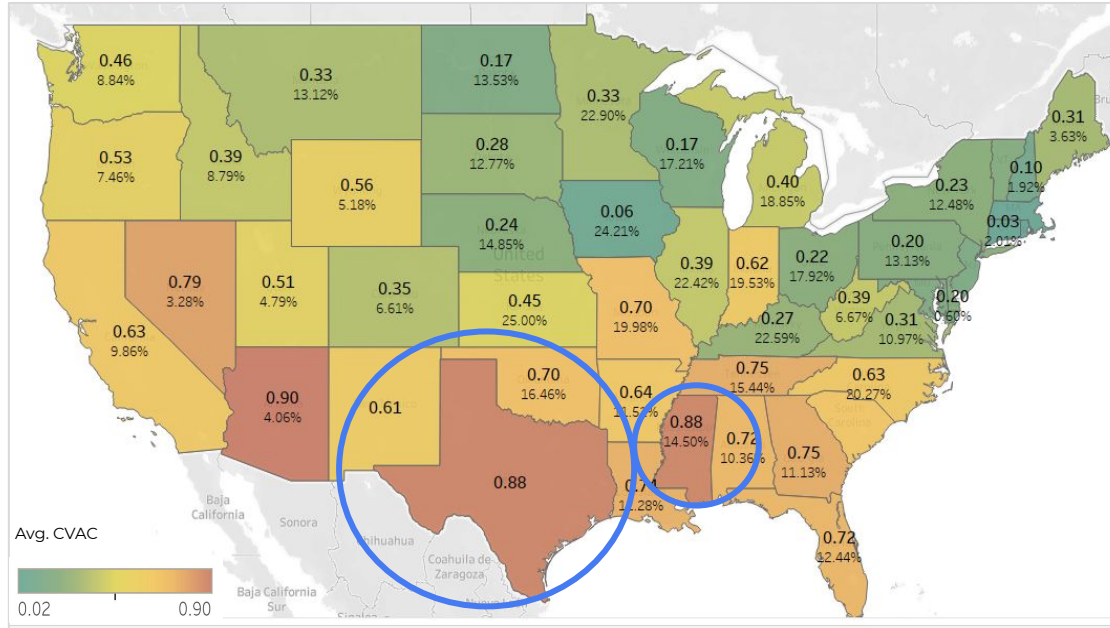
Risk Assessment - SVI vs. Vaccinations Received



- Southern and western states which have very high avg. social vulnerability index (SVI) also observed a higher number of cases and deaths due to COVID 19
- Despite high SVI, states like Arizona only 4.06% of its adult population was fully vaccinated

* Percentages represent Vaccinated adults as percentage of population

Risk Assessment - CVAC vs. Vaccinations Received



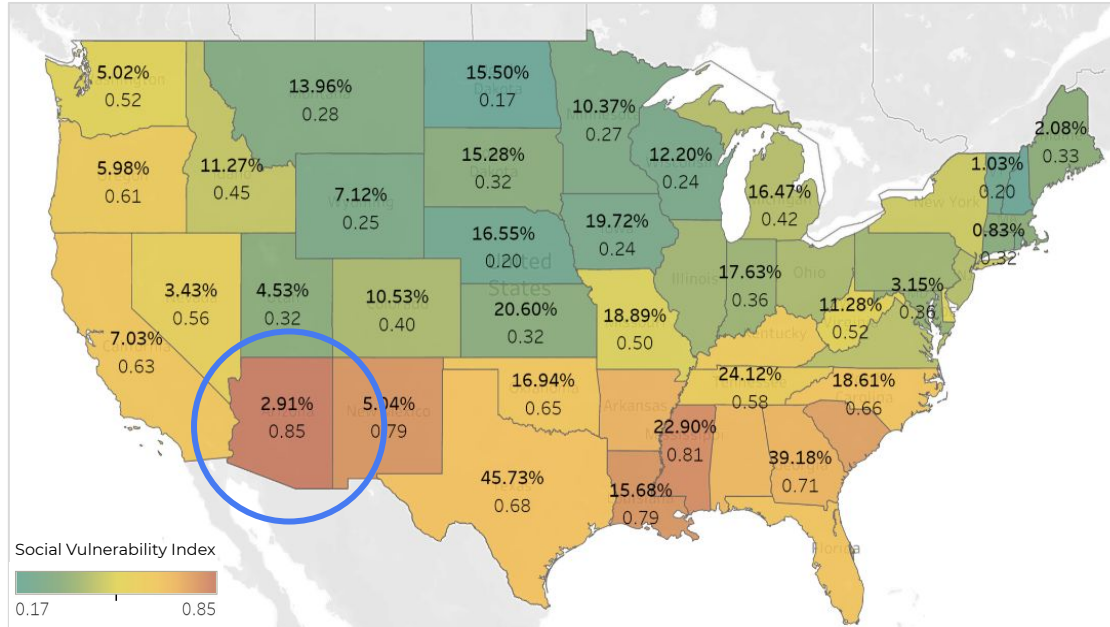
- The ability to handle a COVID-19 outbreak (CVAC) score was highest for Texas that had one of the highest numbers of cases and deaths to date due to COVID 19
- States like Mississippi and Texas depicted high vulnerability with CVAC of 0.88 thus requiring immediate attention of vaccinations

* Percentages represent Vaccinated adults as percentage of population

02-c

Identifying areas of inhibition

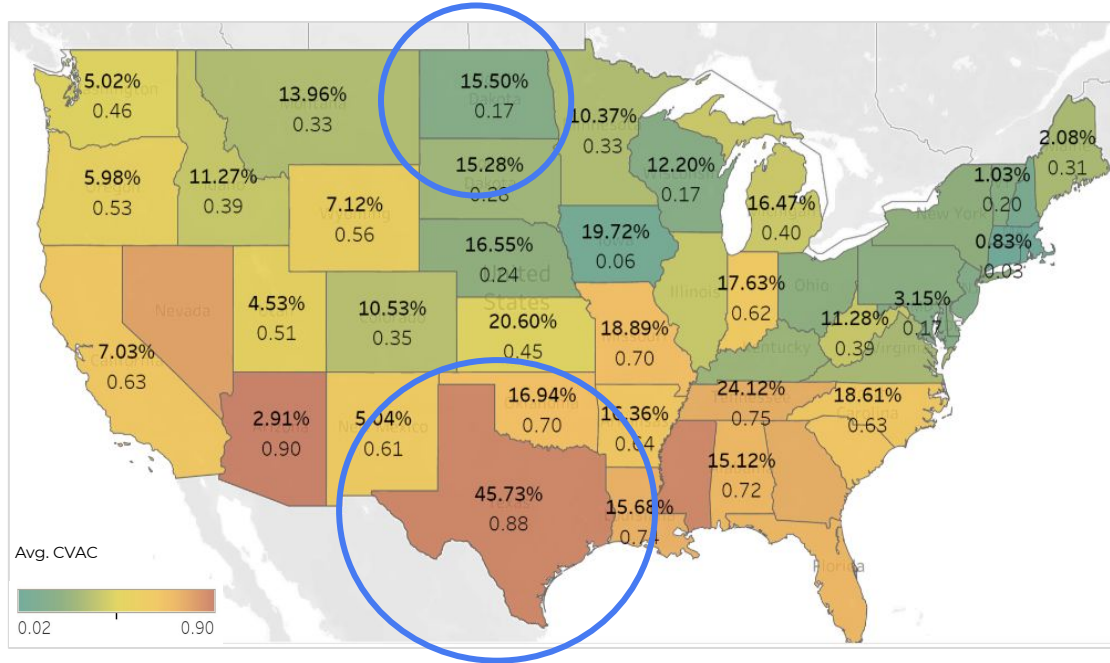
Social Vulnerability Index vs. Vaccine Hesitancy



- Arizona, despite a high SVI of 0.85, showed only 2.91% vaccine hesitancy thereby indicating less apprehensions in the population about the vaccine
- Although northern states have low SVI, they exhibit high average hesitancy

* Vaccine Hesitancy in percentage of population

CVAC vs. Vaccine Hesitancy

























- States like Texas, with very high vulnerability (CVAC 0.88) and high hesitancy (45.73%), pose potential threat of COVID spread
- States, like North Dakota, with low vulnerability (CVAC 0.17) but low hesitancy (15.50%) gain lower priority compared to states with similar hesitancy but higher vulnerability

* Vaccine Hesitancy in percentage of population

02-d

Recommend solutions

Vulnerability vs. Inhibition - Plan of Action

		Vulnerability				
		Very High	High	Moderate	Low	Very Low
Inhibition	Very High					
	High					
	Moderate					
	Low					
	Very Low					

RECOMMENDATIONS

Healthcare facilities in areas of high vulnerability need to be strengthened.

A strong vaccine distribution & administration system will lead to higher vaccination statistics



Apprehensions about the vaccine and its side-effects should be addressed via suitable awareness campaigns

Any misinformation should be clarified to reduce inhibitions

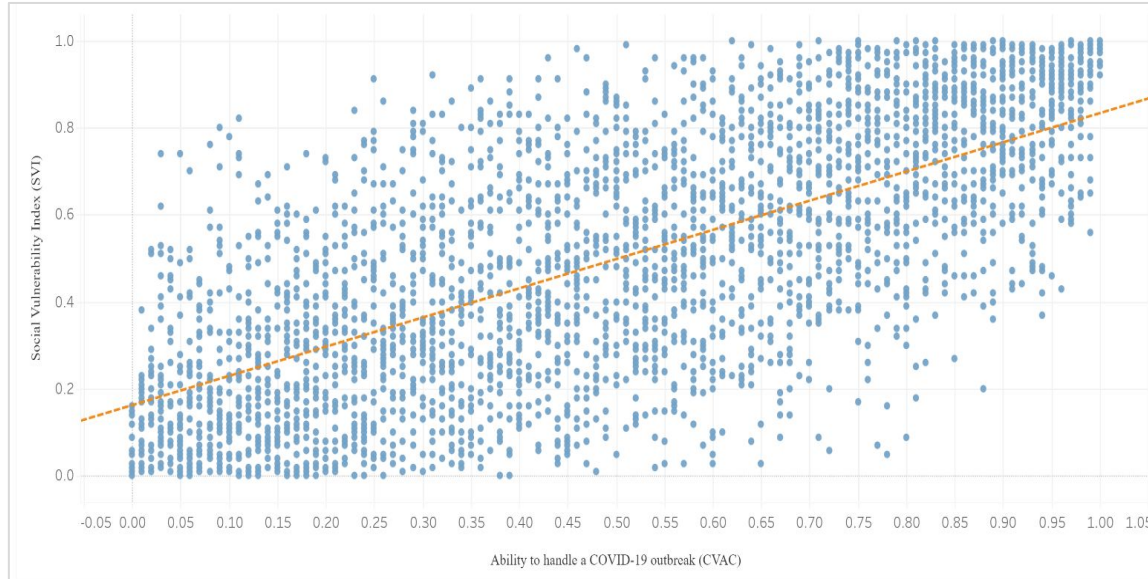
IMPACT

- Increased vaccination and improved health & immunity
- Informed population hence reduced misinformation
- Improved healthcare facilities and hence better preparedness against pandemics



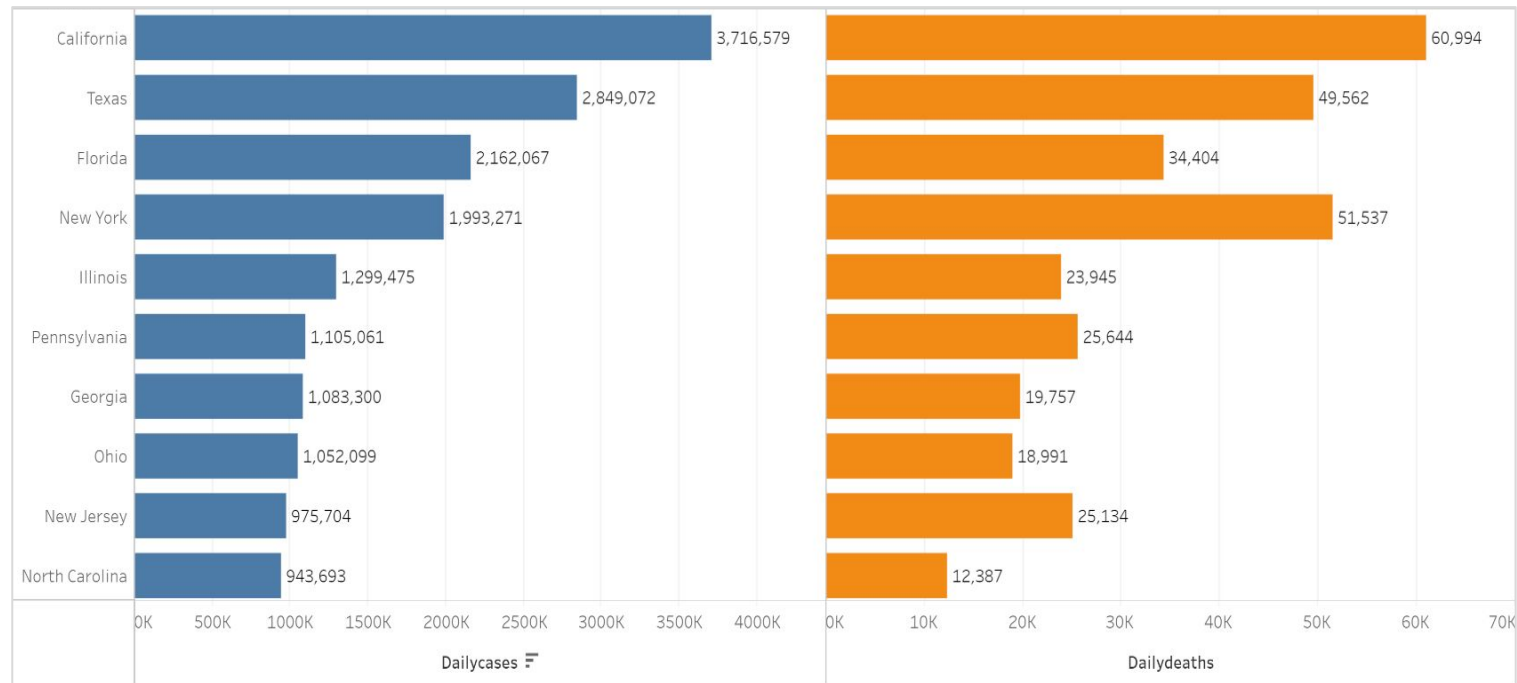
APPENDIX

SVI vs. CVAC



- Social Vulnerability Index (SVI) and ability to handle a COVID-19 outbreak (CVAC) have a very high positive correlation
- States with high SVI in-turn indicate low preparedness against COVID-19 implying high overall vulnerability

Top 10 US states by total cases and deaths



RESOURCES

- Data Sources
 - Cases & Deaths, John-Hopkins University, Kaggle
 - Hesitancy & Demographics, CDC
- References
 - Reporting County Level Vaccination
 - Estimates of vaccine hesitancy for COVID-19

THANKS!



CREDITS

CREDITS: This presentation template was created by Slidesgo, including icons by Flaticon, and infographics & images by Freepik.

