
COVID 19 Spending

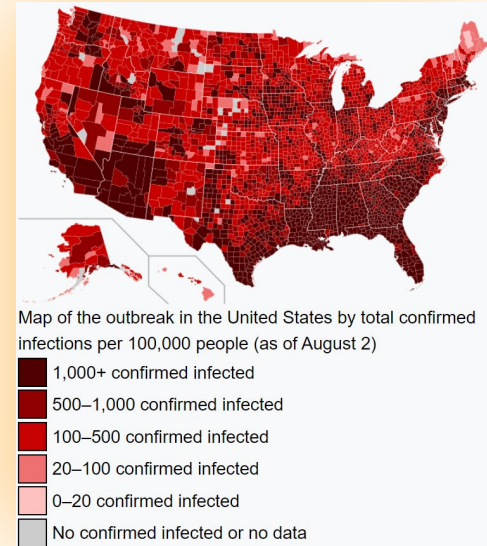
— CS 5010: Final Project —
August 5, 2020

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Introduction

Project Scenario:

- How is COVID-19 funding allocated in the United States?
- Is there an amount per person that seems sufficient for COVID related funding?
- Have any states been successful in bringing their COVID rates down?
- What good news can be gleaned from government funding investments?



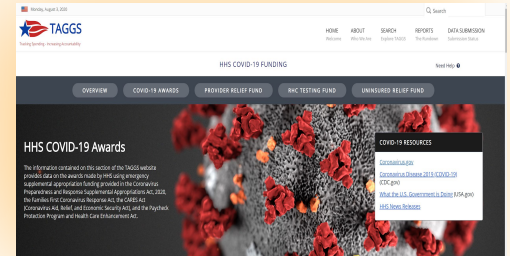
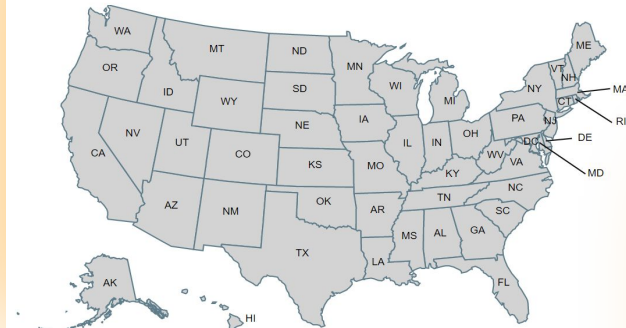
Source:

https://en.wikipedia.org/wiki/COVID-19_pandemic_in_the_United_States

The Data



List of State Abbreviations (Download CSV, JSON)



Leveraged multiple data sets to derive new insights through data conceptualization methods to develop raw data into useful information and knowledge of government spending.

Data Wrangling

#Read the csv files into pandas

```
population = pd.read_csv(r'rawData/populationData.csv')
spendingHHS = pd.read_csv(r'rawData/HHSSpending.csv')
governors = pd.read_csv(r'rawData/govAffiliation.csv')
abbreviations = pd.read_csv(r'rawData/stateAbbreviations.csv')
covid = pd.read_csv(r'rawData/COVIDdata.csv')
```

#Reduce the dataframes to only the columns we need for our analysis

```
population = pd.DataFrame(population, columns= ['NAME', 'POPESTIMATE2019'])
abbreviations = pd.DataFrame(abbreviations, columns = ['State', 'Code'])
covid = pd.DataFrame(covid, columns = ['date', 'state', 'positive',
                                       'hospitalizedCurrently', 'hospitalizedCumulative',
                                       'recovered', 'death', 'positiveIncrease', 'totalTestResults'])
```

#Rename columns to get rid of the multiple variations of the same column and to be more descriptive

```
population = population.rename(columns={'NAME': 'State', 'POPESTIMATE2019': 'population2019'})
spendingHHS = spendingHHS.rename(columns={'State': 'stateCode', 'Award_Amount': 'Amount'})
governors = governors.rename(columns={'state': 'stateCode'})
abbreviations = abbreviations.rename(columns={'Code': 'stateCode'})
covid = covid.rename(columns={'state': 'stateCode'})
```

#Reformat the date column in the covid dataframe and sort by date

```
covid['date'] = pd.to_datetime(covid['date'].astype(str), format='%Y%m%d')
```

#Use grouping to find the total HHS spending by state and save it as a dataframe

#The dataframe was given a new name so we could use the spendingHHS dataframe again in Section 4

```
funding = pd.concat([spendingHHS.groupby(['stateCode'])['Amount'].sum()], axis=1)
```

Overall Analysis on the 50 US States

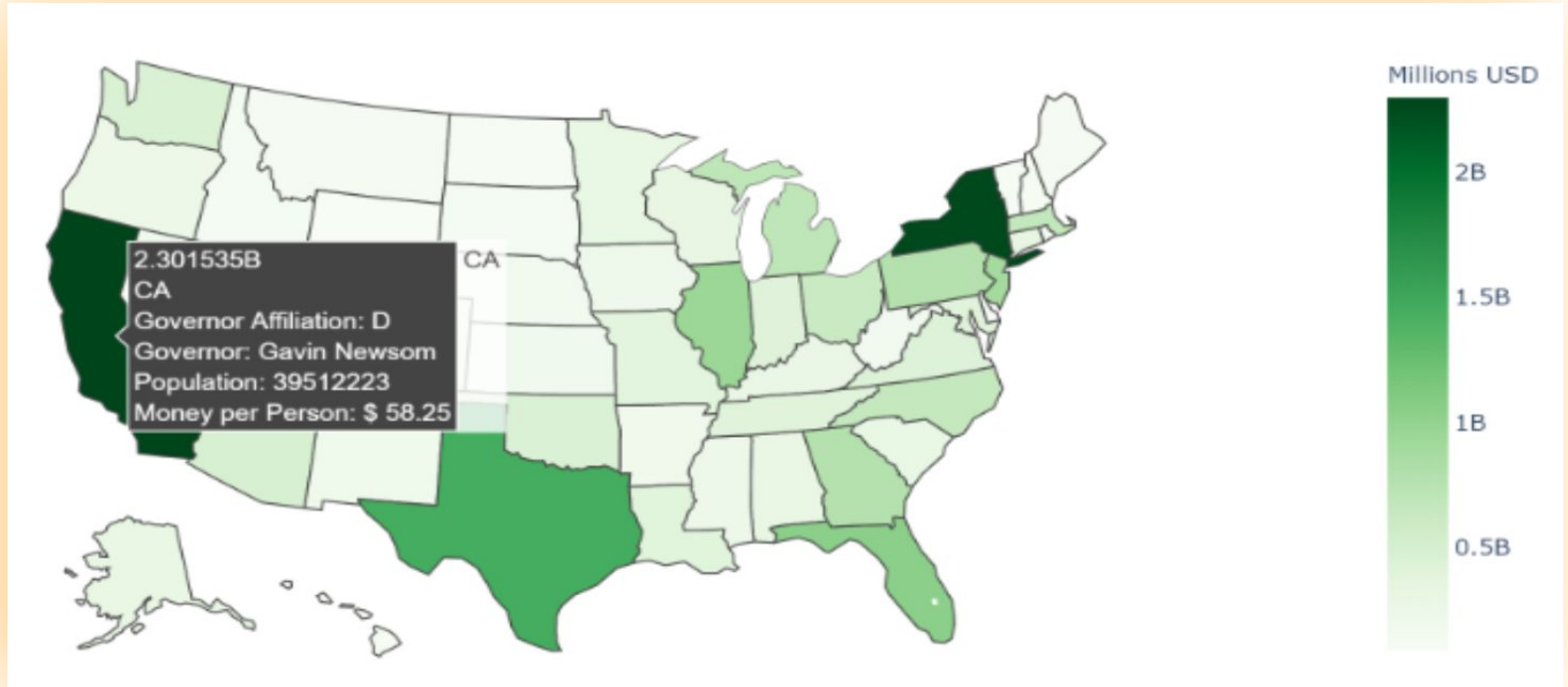
```
#now Lets print states that have the highest amount of recoveries  
print(covid.loc[(covid['date'] == '6/30/2020') & (covid['recovered'] > 70000)])
```

	State	stateCode	date	positive	hospitalizedCurrently	\
2464	Massachusetts	MA	2020-06-30	108882.0	733.0	
5051	Texas	TX	2020-06-30	159986.0	6533.0	
3752	New York	NY	2020-06-30	393454.0	891.0	

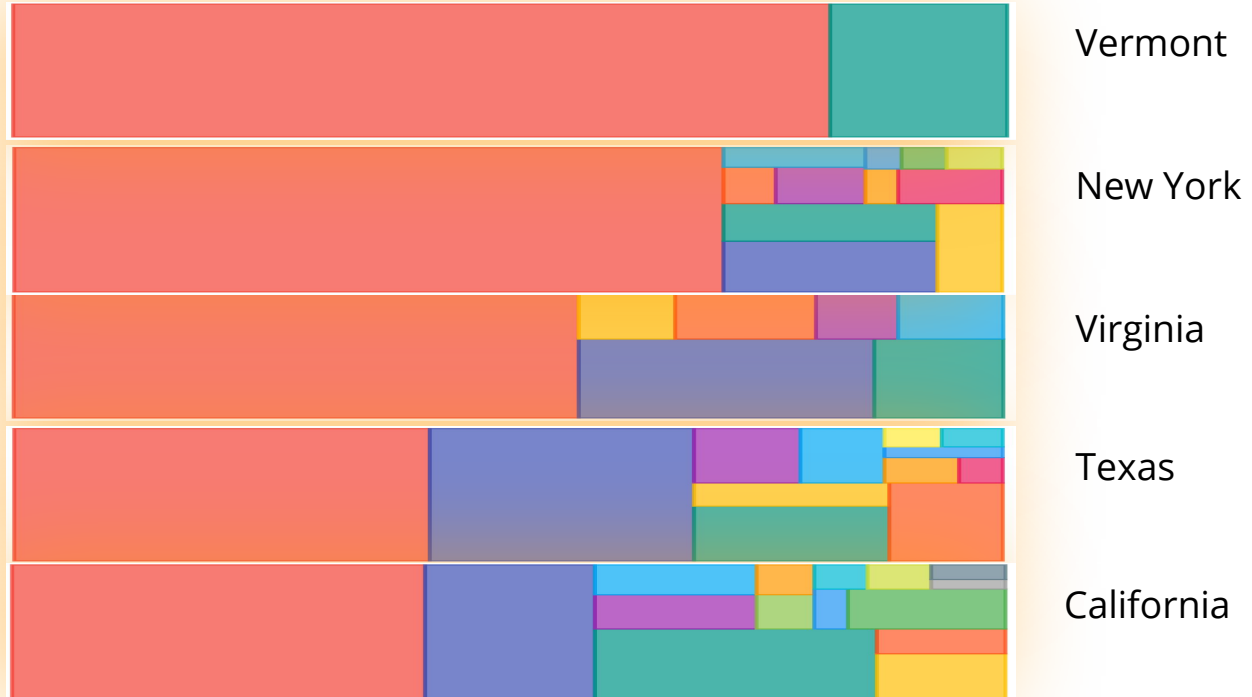
	hospitalizedCumulative	recovered	death	positiveIncrease	\
2464	11337.0	93157.0	8054.0	114	
5051	NaN	84818.0	2424.0	6975	
3752	89995.0	70487.0	24855.0	524	

	totalTestResults
2464	848141
5051	1869282
3752	3914938

Choropleth Map: USA Spending



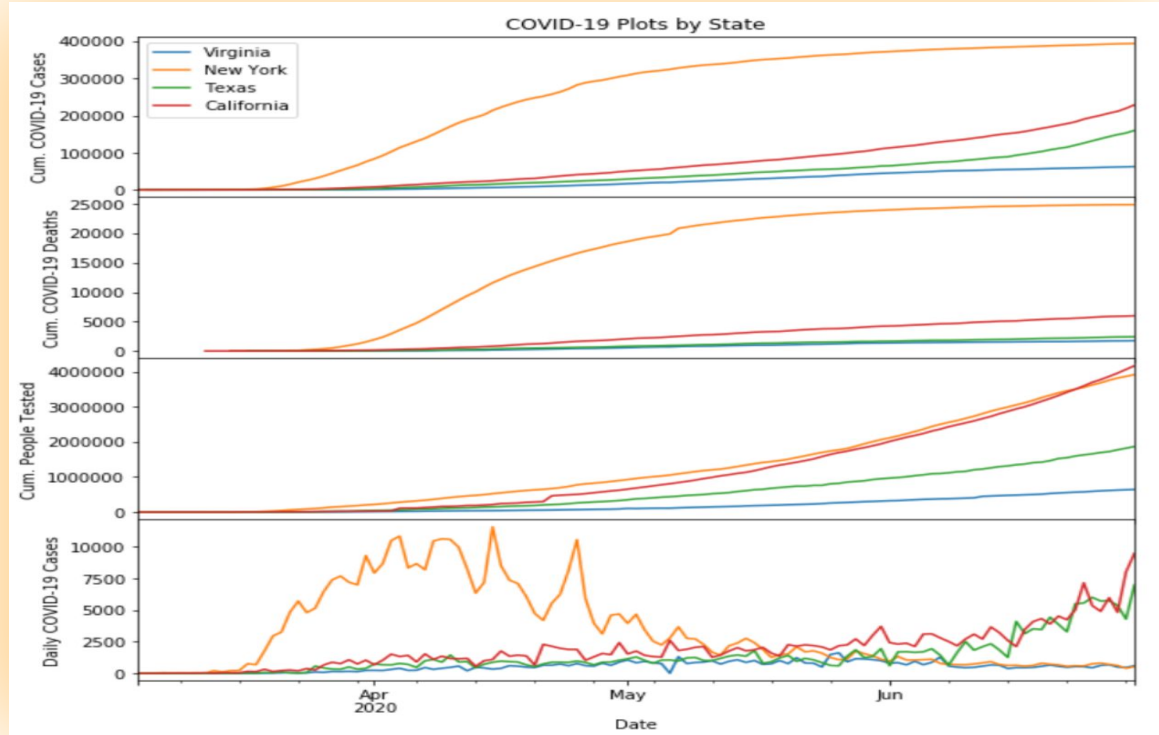
Treemap Chart: State Spending



Results: HHS Program Descriptions

	The Epidemiology and Laboratory Capacity for Infectious Diseases (ELC) program is the nation's support system to state and local health agencies for general infectious disease threats.
	Child Care and Development Block Grants support states, territories, and tribes to provide assistance to child care providers in order to financially support them during the public health crisis.
	Federally Qualified Health Centers are community-based health care providers that receive funds from the Health Center Program to provide primary care services in underserved areas.
	The Community Services Block Grant provides funds to alleviate the causes and conditions of poverty in communities.

User Input Analysis on the Given US States



Testing

```
Enter a list of state abbreviations separated by a space or type 'all' without quotes to compare all 50 states: IDK  
ERROR: IDK is not one of the state abbreviations. Please rerun the code using any combination of the state abbreviations below.
```

stateCode	State
AL	Alabama
AK	Alaska
AZ	Arizona
AR	Arkansas
CA	California
CO	Colorado

Conclusions

- In-depth analysis: Vermont v Texas
- Is the question how much money or how are they spending the money?
- Funds must be allocated:
 - Expenses incurred March through December
 - Where will the rest go?
- Social Factors
 - Mask wearing
 - Social distancing
 - Travel restrictions

Conclusions

So how did we answer our questions?

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