

The background of the slide features a close-up, artistic rendering of several COVID-19 virus particles. These particles are depicted as spherical, greyish-blue structures with a textured, almost fibrous surface. They are densely covered with small, bright red, crown-like protrusions, which represent the viral glycoprotein spikes. Interspersed among these red spikes are smaller, yellowish-gold dots, likely representing the viral RNA genome. The particles are scattered across the frame, with some in sharp focus in the foreground and others blurred in the background, creating a sense of depth. The overall color palette is dominated by the greys of the viral capsid, the vibrant red of the spikes, and the pale yellow of the internal components.

Covid-19 Positive Cases in California

Data Exploration and Exploratory Data Analysis

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Background & Motivation

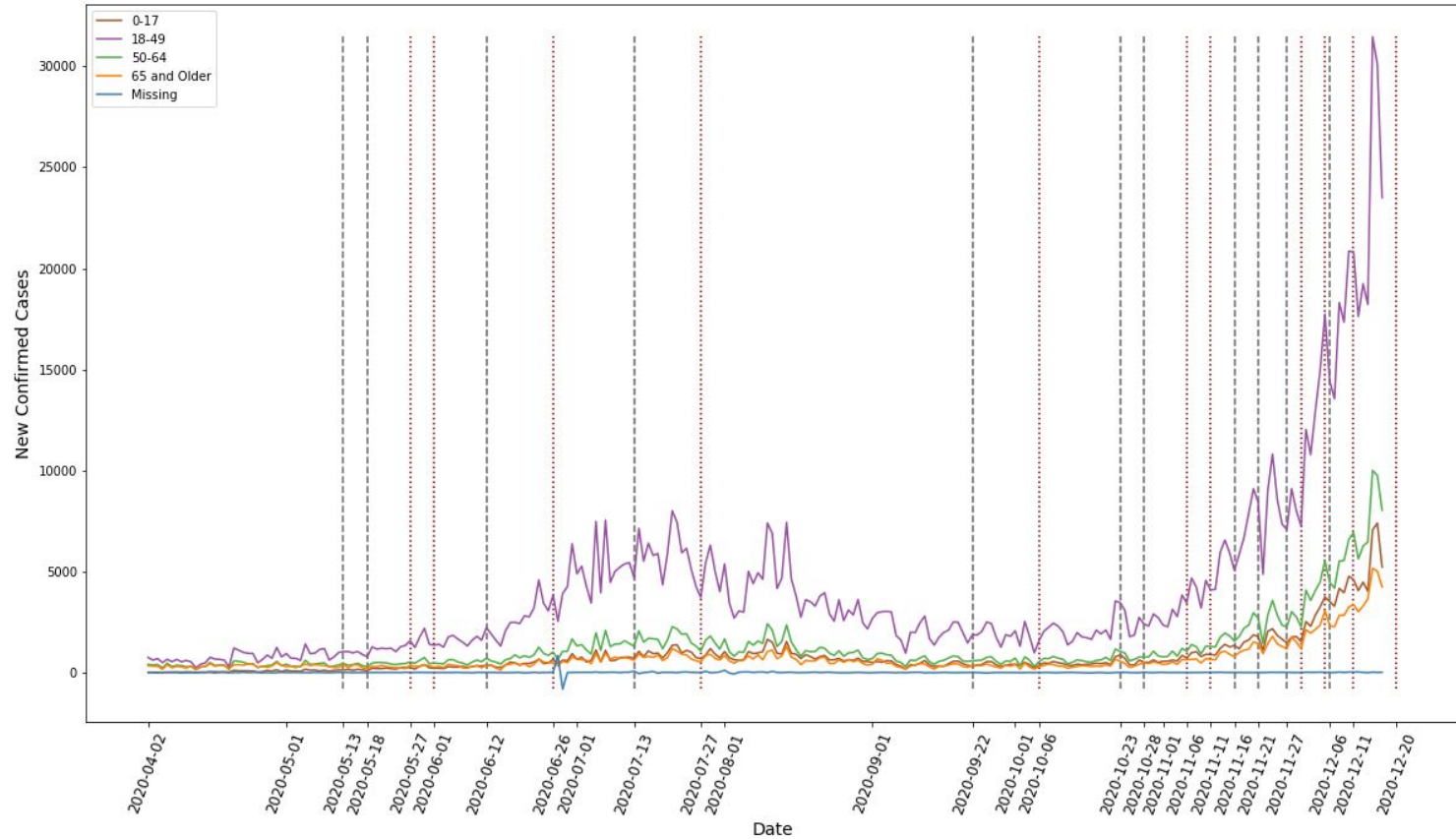
- Covid-19 is a new illness that affects one's respiratory system. It's spread through respiratory droplets and can be deadly, especially for people over the age of 65.
- The United States have had a difficult time handling the pandemic and state governors are told that they are responsible for handling the pandemic with little to no federal help.
- On March 16, 2020, stay-at-home orders were put into place in California to slow the spread of Covid-19.

Data Exploration

Daily New Confirmed Cases in California

Starting on 2020-04-02 to 2020-12-18

Based on Age Group



Data Exploration

Date	Age Group	Total Positive Cases	New Confirmed Cases
2020-04-02	0-17	120	17
2020-04-02	18-49	5302	748
2020-04-02	50-64	2879	406
2020-04-02	65 and Older	2342	330
2020-04-02	Missing	58	8

Date	Age Group	Total Positive Cases	New Confirmed Cases
2020-12-16	0-17	208045	5221
2020-12-16	18-49	1043558	23502
2020-12-16	50-64	331246	8031
2020-12-16	65 and Older	180273	4243
2020-12-16	Missing	1252	15

Data Exploration

Date	Age Group	(Positive Cases) / (Age Group Population)	(New Cases by Age) / (Total New Cases)
2020-04-02	0-17	0.00001	0.011258
2020-04-02	18-49	0.00030	0.495364
2020-04-02	50-64	0.00040	0.268874
2020-04-02	65 and Older	0.00040	0.218543
2020-04-02	Missing	N/A	0.005298

Date	Age Group	(Positive Cases) / (Age Group Population)	(New Cases by Age) / (Total New Cases)
2020-12-16	0-17	0.02305	0.127304
2020-12-16	18-49	0.05999	0.573052
2020-12-16	50-64	0.04566	0.195821
2020-12-16	65 and Older	0.03090	0.103458
2020-12-16	Missing	N/A	0.000366

Q: Is the positive cases for each age group in California a sample of the positive cases for each age group in the United States?

After careful analysis, no, positive cases for each age group California is not a sample of the positive cases for each age group in the US.

Age Group	Observed Cases in California	Expected Cases in California
0-17	208045	181748
18-49	1043558	960402
50-64	331246	359721
65 and Older	180273	252994
Missing	1252	9528

Conclusion

Although efforts to mitigate the spread of Covid-19 have had some effect on slowing down the spread of Covid-19 have been somewhat successful (e.g. stay-at-home orders, slowly reopening the public and closing it down when things got worse), there still needs to be some effort in enforcing the stay-at-home orders and something in affect to help those who were impacted by Covid-19 financially (e.g. laid off, hours cut, etc.), especially people of the ages 18-49. Additionally, there was no indication that the positive cases for each group in California is not a sample of the positive cases for each age group in the United States.

References

California Department of Public Health. 2020. California Total Covid-19 Cases. Retrieved from <https://data.ca.gov/dataset/covid-19-cases/resource/926fd08f-cc91-4828-af38-bd45de97f8c3>

California Department of Public Health. 2020. California Total Covid-19 Cases - Age Demographics. Retrieved from <https://data.ca.gov/dataset/covid-19-cases/resource/339d1c4d-77ab-44a2-9b40-745e64e335f2>

Centers for Disease Control and Prevention. 2020. Demographic Trends of COVID-19 cases and deaths in the US reported to CDC. Retrieved from <https://covid.cdc.gov/covid-data-tracker/#demographics>

U.S. Census Bureau (2019). Sex by Age American Community Survey 1-year estimates. Retrieved from https://censusreporter.org/data/table/?table=B01001&geo_ids=04000US06,01000US&primary_geo_id=04000US06#valueType|estimate

California Dept. of Finance, Population Estimates and Projections. 2020. U.S. Census Bureau, Population and Housing Unit Estimates. Retrieved from <https://www.kidsdata.org/topic/34/child-population-age-gender/table#fmt=141&loc=2&tf=110&ch=1433,926,927,1434,1435,372,78,77,79&sortColumnId=0&sortType=asc>

Cal Matters. Timeline: California reacts to coronavirus. Retrieved from <https://calmatters.org/health/coronavirus/2020/04/gavin-newsom-coronavirus-updates-timeline/>