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**COVID-19 – THE UNTOLD STORY**

What has happened so far and how exactly we arrived here - Situational understanding

Goal:

Investigate the differences in infection and death rates between regions, states and individual counties, and the significance of these differences.

Question 1: How did we get here? What brought us to this point in the proliferation of the virus?

1. Cases began to rise toward the end of March with an increase in deaths lagging 10-14 days behind.

A screenshot of a map

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1. When we take a closer look at the daily variation in the virus reporting, we can see that there is a slight plateau in the daily increase in virus reporting.

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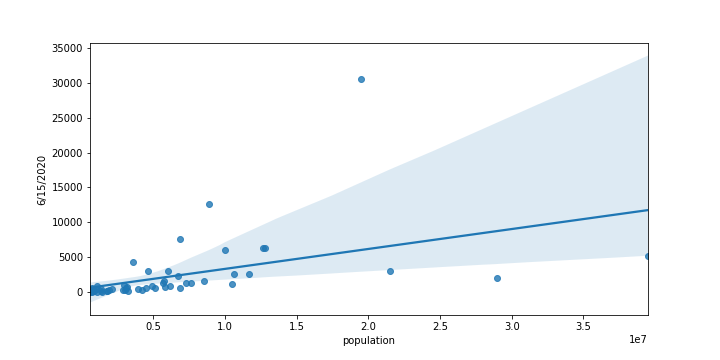
1. Upon examination of which counties are reporting virus cases, it can be noted that the gross number of counties are growing more asymptote adjacent.

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Question 2: Do states report similar outbreak patterns and mortality rates?

1. When we look at state population, we see that just having a larger number of citizens does not directly indicate that a high number of cases will follow.



1. A close up of a piece of paper

   Description automatically generatedThe outcome when the mortality data is examined by state paints a more shocking picture. Contrary to what might be indicated by news, it is not just New York that has a startlingly high mortality rate. New York actually falls in 3rd after Michigan and Connecticut.
2. A screenshot of a social media post

   Description automatically generatedWhen looking at the upper end of the mortality rate spectrum, we would want to see the significance of the outliers and to do that, we will create a box and whisker plot.

Question 3: What is the geographical importance?

1. When we examine the locations of the highest mortality rates, we can see a pattern indicating that the Northeast is home to the top six.

A close up of a map

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1. Judging by the above data, we would like to see if location alone plays an important role in the deaths of COVID victims or if there are larger forces at play. When we analyze the latitude of the states however, we can see that it is more than geography.

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1. If it isnt location affecting these locations, what can it be?

Question 4: Is access to healthcare affecting the mortality rates?

1. An HPSA score is given to each county (and a large number of clinics) in the United States and is a measure of each location’s need for clinicians. The score for primary care ranges from 1-25 with the higher number indicating that location has a higher need for medical staff.
2. HPSA scores were assessed in order to determine if access to healthcare could have been an indicator as to which locations would be harder hit. When assessing each county’s mortality rate versus their HPSA score, we notice only weak correlation between the two.

A screenshot of a social media post

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1. There is a higher correlation between HPSA score and deaths per capita, however indicating that HPSA score can more closely predict death rate per person in a given population rather than the mortality rate.

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Question 5: Is Age the driving factor behind COVID morbidity and mortality?

Question 6: Is poverty a more convincing model to determine COVID infection and deaths?