Visualizing COVID-19 Based On Age Breakdown

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Introduction

COVID-19 is currently a topic that relates to everyone as a global pandemic.

- About 4 million global deaths
- About 191 million global cases
- About 3.84% who got tested are positive
- A new Delta variant is causing new cases
- A new variant is spreading fast
- About 191 million global cases
- About 4 million global deaths

Vaccinations are one of the ways to track the amount of people who are less likely to get COVID.

Literary Research/Scholar Reading on Different Types of COVID Model

<table>
<thead>
<tr>
<th>Susceptible</th>
<th>Infectious</th>
<th>Recovered</th>
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<tbody>
<tr>
<td>S</td>
<td>I</td>
<td>R</td>
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Figure 3. SIR Disease Compartment Model

MATLAB Code and Visualization for Vaccinations Based on Age Breakdown

Building A Disease Compartment Model

MATLAB Code and Visualization for Vaccinations

Building A Disease Compartment Model

Visualizing Data and Viewing Trends

Objective

- Visualize UAS Data
- Characterize Behaviors by Age
- Explore different models for COVID
- Create COVID compartment Model
- Visualize Vaccinations By Age

Literary Research/Scholar Reading on Different Types of COVID Model

Next Steps

After learning about visualizing data and creating models, I would like to delve further into listening in on the focus groups as well as learning more about behavioral aspects that affect COVID policies to build a more accurate and relevant model.

Skills Learned

- Literate Research/Scholar Reading
- Mathematical and computational modelling
- Visualizing Vaccinations
- Pie Chart
- Multi-Regional, Hierarchical-Tier Mathematical Model

Impact of Professor’s Research

Professors Sze-chuan Suen and Shinyi Wu are collaborating to build a COVID-19 model at the LA County level as well as incorporating health safety climate that assesses social behaviors in different service planning areas (SPA).

Professor Suen

- Mathematical and computational modelling

Professor Wu

- Focus group interviews analyzing the effectiveness of current policies and behaviors

Acknowledgements

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References


Three different ways to visualize

- Pie Chart Cases (7/21/2021)
- Pie Chart Vaccines (7/2/2021)
- Line Graph (3/8/21 – 7/2/21)

Conclusions

- Proportions of Cases for ages 12-15 are far greater than the number vaccinated
- Vaccinations were especially useful in the 50-79 age category as seen through case/vaccination proportions
- 30-49 age group = greatest amount of vaccinated
- 12-15 age group = least amount of vaccinated
- Reasons for older age trends
  - Concerns for Risk Vs Benefit
  - Reasons for younger age trends
  - Education
  - Geography

Number of Cases

- 12-15 years: 28%
- 16-29 years: 28%
- 30-49 years: 24%
- 50-64 years: 10%
- 65-79 years: 6%
- 80+ years: 2%

Number of Vaccinated

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- 16-29 years: 28%
- 30-49 years: 24%
- 50-64 years: 10%
- 65-79 years: 6%
- 80+ years: 2%

Number of People Vaccinated In LA County

- May: 200,000
- June: 250,000
- July: 300,000
- August: 350,000
- September: 400,000
- October: 450,000
- November: 500,000
- December: 550,000

Figure 2. Likely to Get Vaccinated %

Figure 7. Pie Chart of Age Breakdowns of Cases

Figure 8. Pie Chart of Age Breakdowns of Vaccinations

Figure 9. Plot of Vaccines By Age