

Problem Statement

Research Question:

How do the actions, such as vaccination and masking policy, impact the number of cases and deaths during covid?

County:

Allegheny County, Pennsylvania



Motivation

1. Covid changed our lifestyle
2. Huge amounts of data generated during pandemic

Dataset Used

COVID-19 data from John Hopkins University

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Source Link <https://www.kaggle.com/datasets/antgoldbloom/covid19-data-from-john-hopkins-university>

Commonwealth of Pennsylvania

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Source Link <https://www.health.pa.gov/topics/disease/coronavirus/Vaccine/Pages/Vaccine.aspx>

Dataset Used

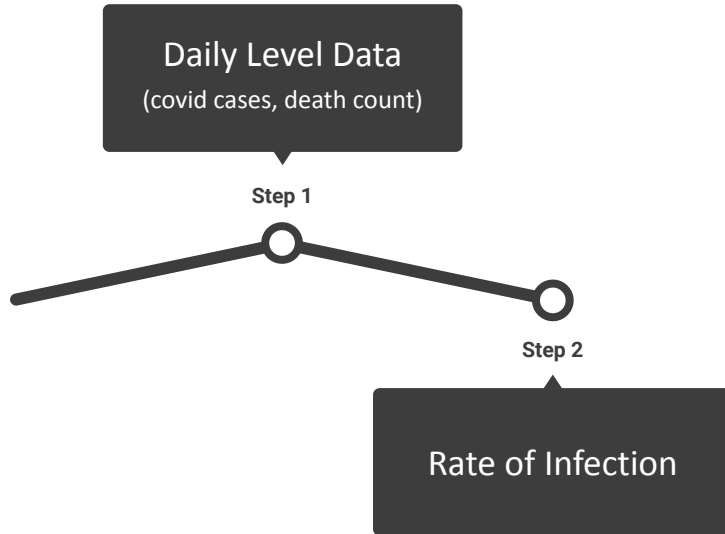
```
df_covid_masking_combined.columns
```

```
Index(['date', 'confirmed_cases', 'Face_Masks_Required_in_Public', 'death',  
      'current_population', 'change_in_daily_cases'],  
      dtype='object')
```

```
df_Vaccinations_Allegheny.columns
```

```
Index(['Date', 'County Name', 'Partially Vaccinated', 'Fully Vaccinated',  
      'First Booster Dose', 'Second Booster Dose', 'Bivalent Booster 1'],  
      dtype='object')
```

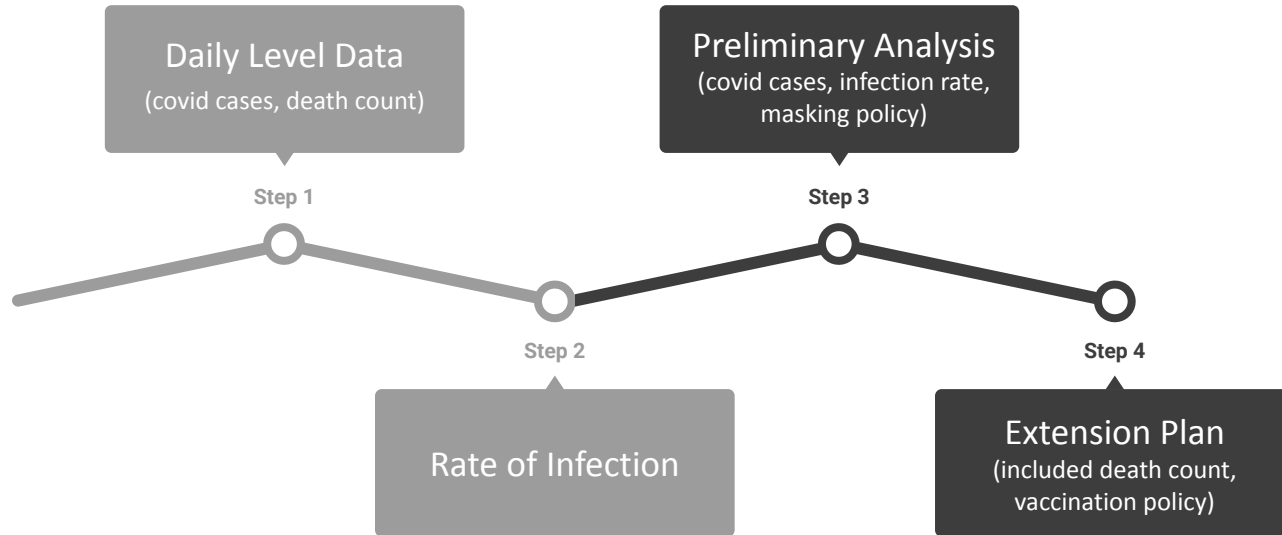
Methodology



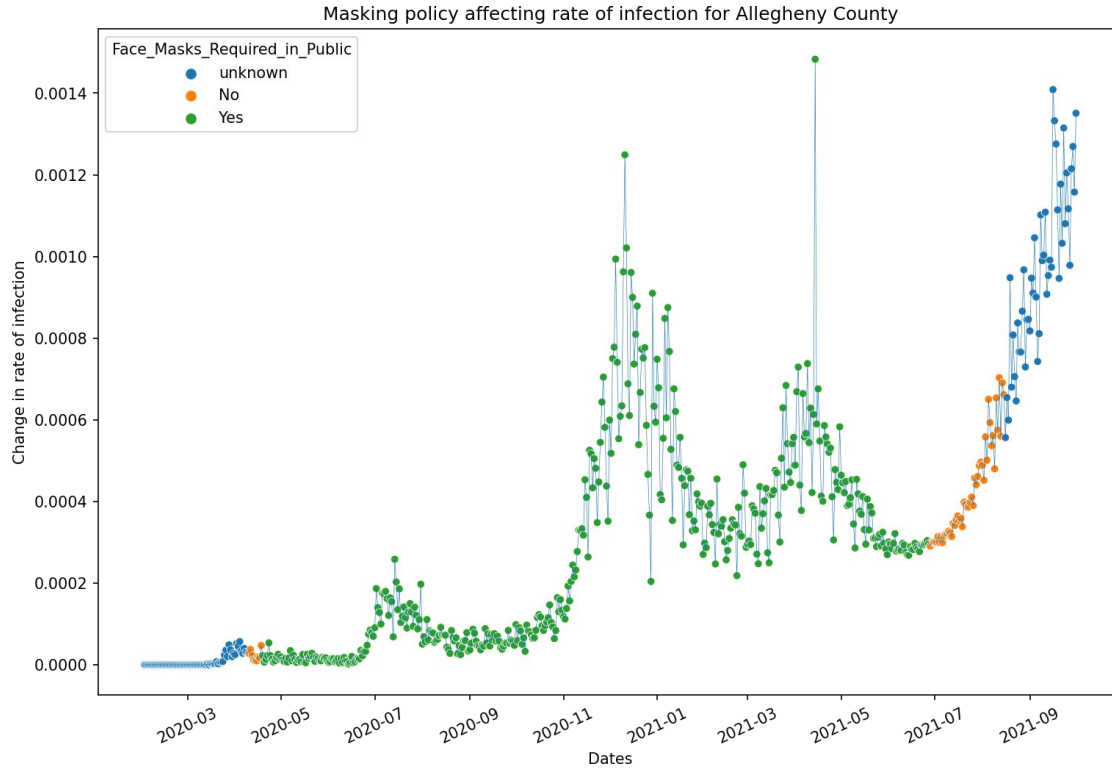
$$\text{Infection Rate} = \frac{\text{Number of Infections}}{\text{Population Size}}$$

[Source: New York Times](#)

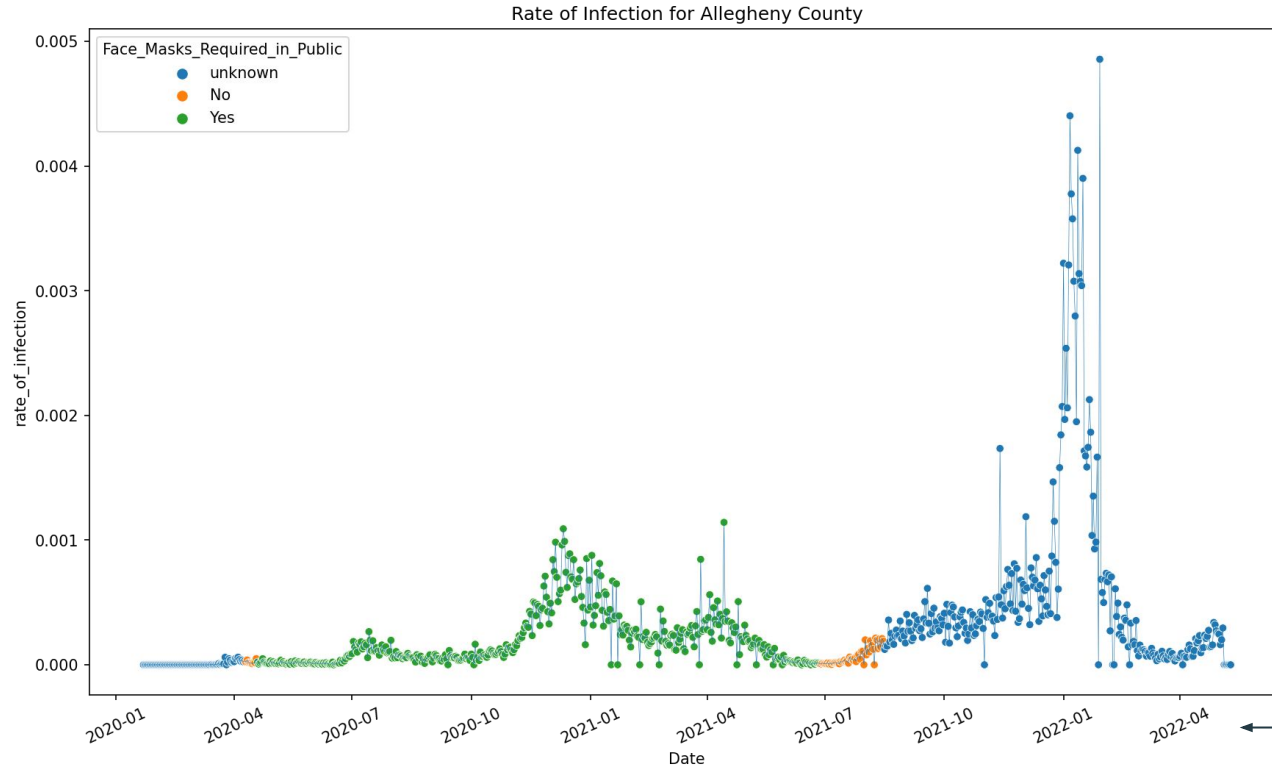
Methodology



Results - Preliminary Analysis

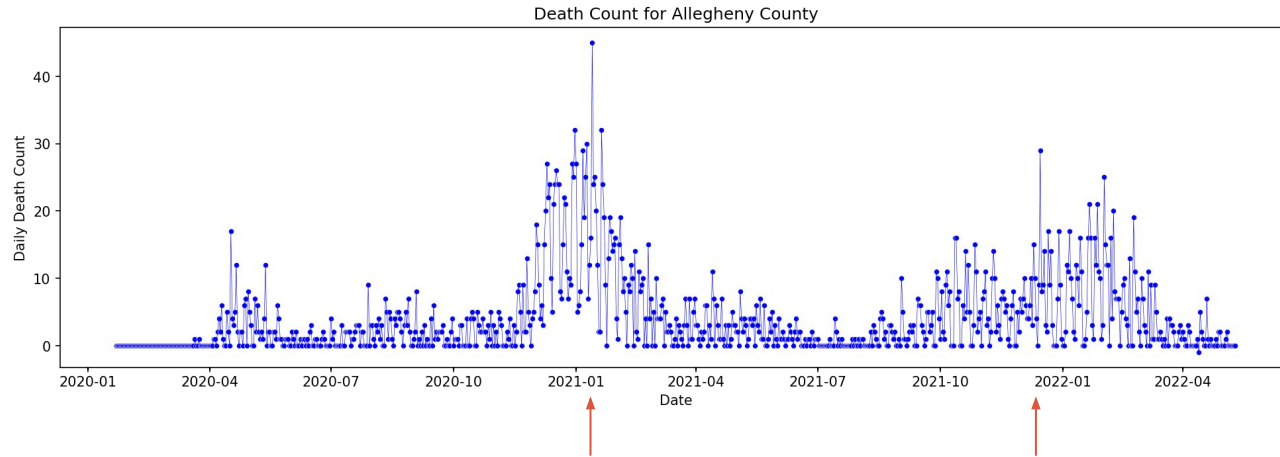


Results - Preliminary Analysis

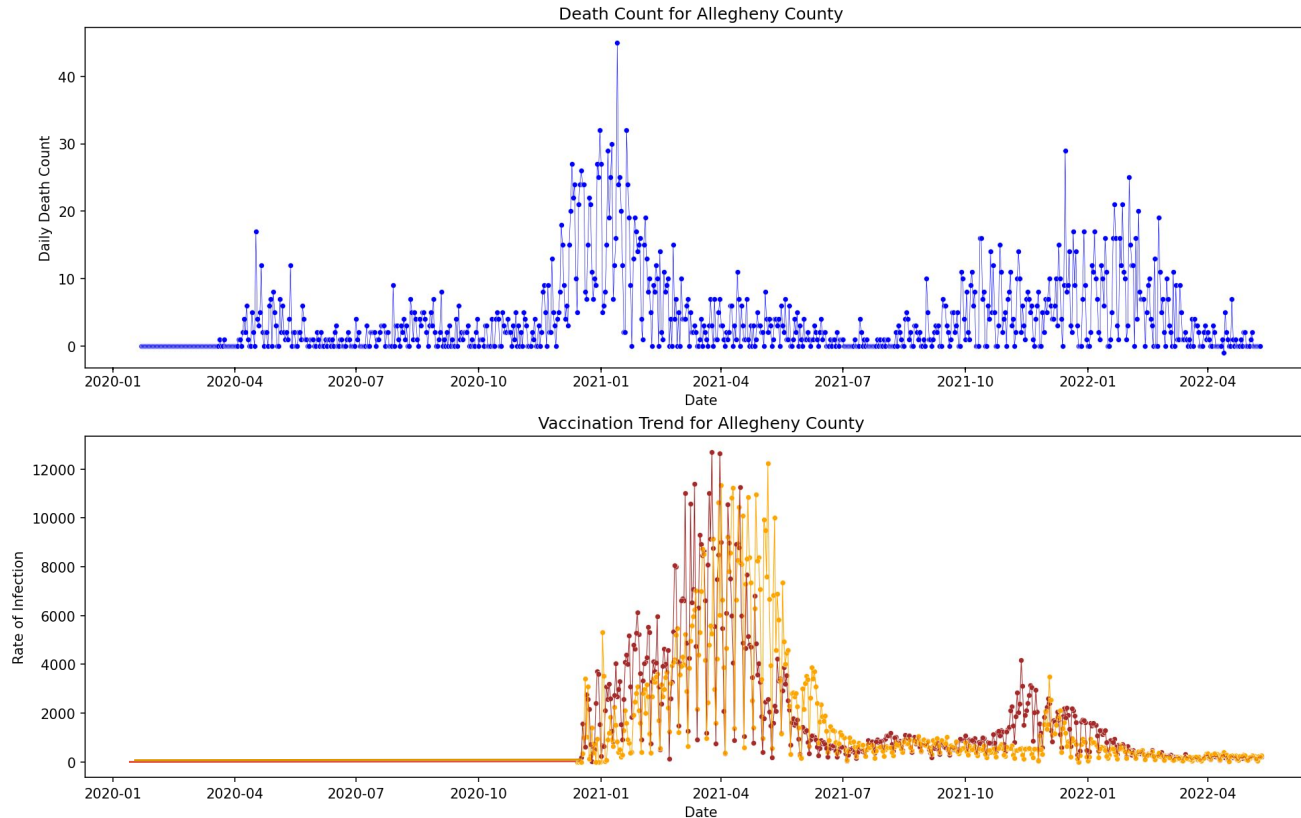


Feb 2020 - May 2022

Results - Death Rate (due to covid)



Results - Death Rate and Vaccination Count



Why are these results important?

1. Gaining understanding of Covid spread over time
2. Show that using masks reduce the spread of infection
3. Use of vaccination reduced the death count over time

Why is this human centered?

- Using data generated by humans
- Performing analysis to derive useful information
- Communicating results to the audience