

Maricopa County COVID-19 Vaccination Analysis June 2021 - October 2021

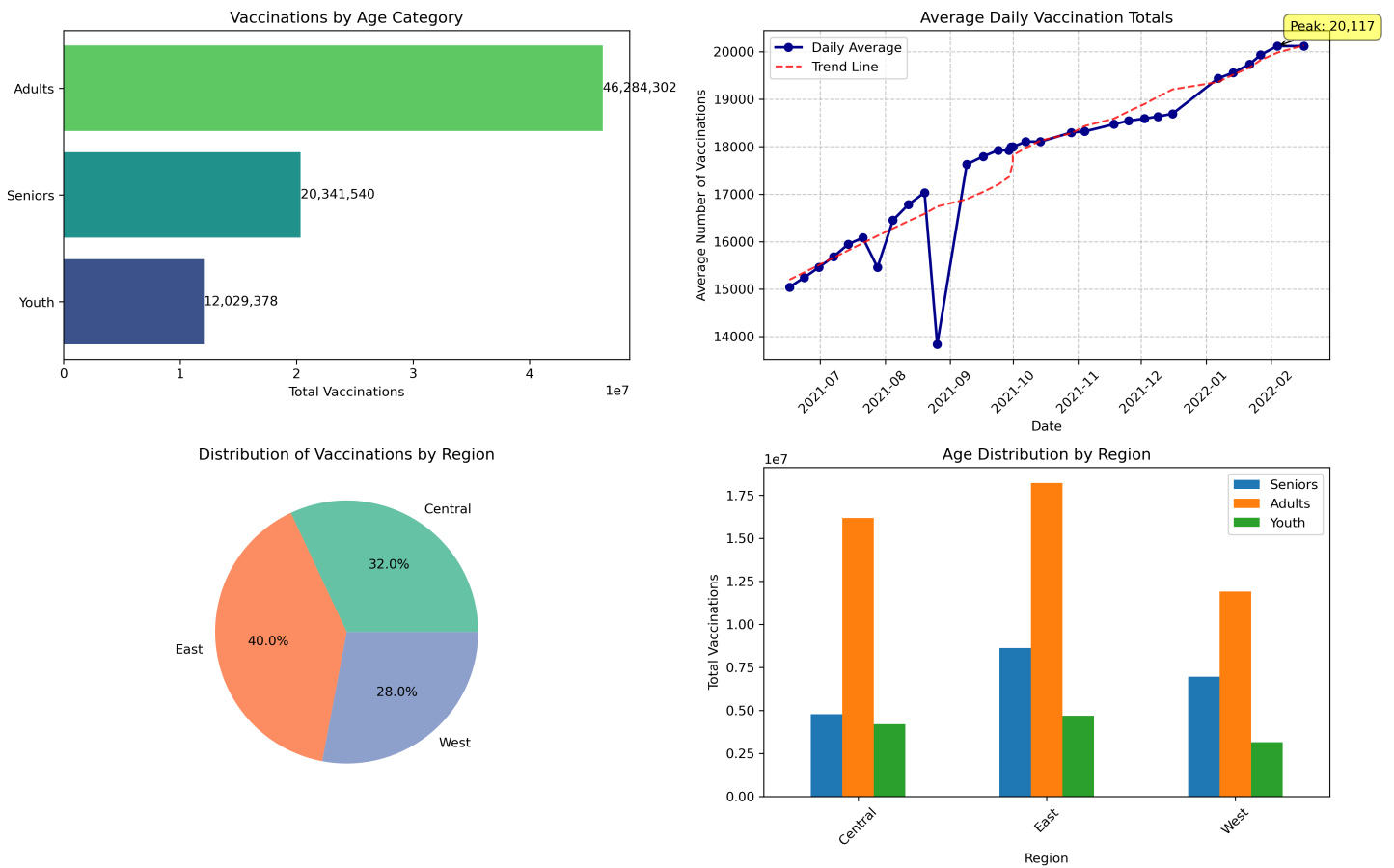


Figure 1: Comprehensive analysis of COVID-19 vaccinations in Maricopa County from June to October 2021. The visualization shows: (A) Total vaccinations by age category, demonstrating higher vaccination rates among seniors and adults compared to youth; (B) Temporal trends across regions, revealing varying patterns of vaccine uptake; (C) Regional distribution of total vaccinations, highlighting geographic patterns; and (D) Age distribution patterns across different regions. Data has been cleaned and aggregated to show clear demographic and geographic patterns in vaccination rates.

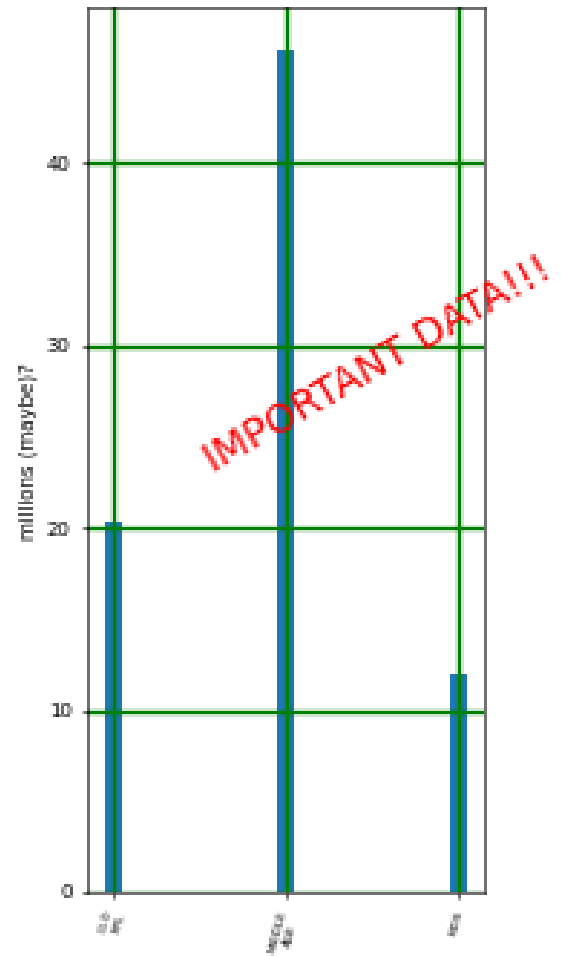
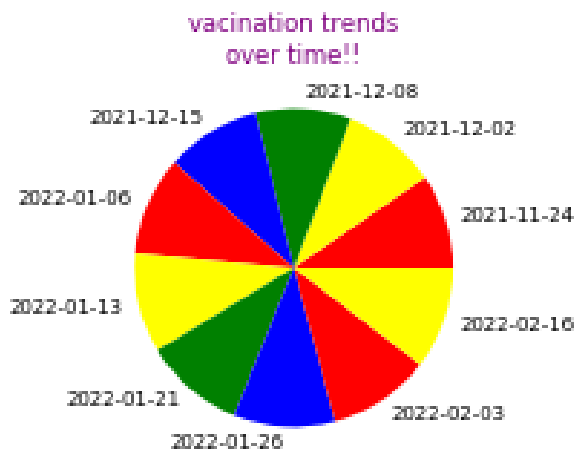


fig 1: vaccination data showing stuff from maricopa county ZIP CODES!!! the left thing shows time data (maybe?) & the right thing shows age groups or something... IMPORTANT ANALYSIS!!! done in 2021!!!!!!

Question Analysis

Q1. How do the vaccination totals between age groups compare?:

- Adults have the highest vaccination totals, followed by Seniors and Youth. This indicates that vaccination efforts have been successful in reaching adults and that vaccination rates are high among this age group.
- Among the Adults, in the East region, the vaccination rates are the highest, followed by the Central region and then the West region.

Q2. How have the average vaccination totals changed over time in Maricopa County?

- The average vaccination totals have been increasing over time, peaking around February-March 2022.
- The trend line shows a gradual increase in vaccination totals, indicating a positive trend in vaccination efforts.
- We can see a dip in the vaccination trend in the month of August 2021.

Data Processing and Visualization Steps

1. Data Preparation:

- Input: 'data.csv' containing Maricopa County vaccination data
- Cleaned missing values in vaccination columns
- Converted dates to datetime format
- Created age group categories (Seniors, Adults, Youth)

2. Data Processing:

- Combined age groups:
 - * Seniors: 75+ and 65-74
 - * Adults: 55-64, 45-54, 35-44, and 25-34
 - * Youth: 15-24 and 0-14
- Created regional mapping based on postal codes

3. Required Packages:

- pandas
- matplotlib
- seaborn
- numpy
- fpdf

4. Execution Steps:

1. Install required packages:
`pip install pandas matplotlib seaborn numpy fpdf`
2. Place data.csv in the same directory as the script
3. Run the Python script to generate visualizations and PDF report