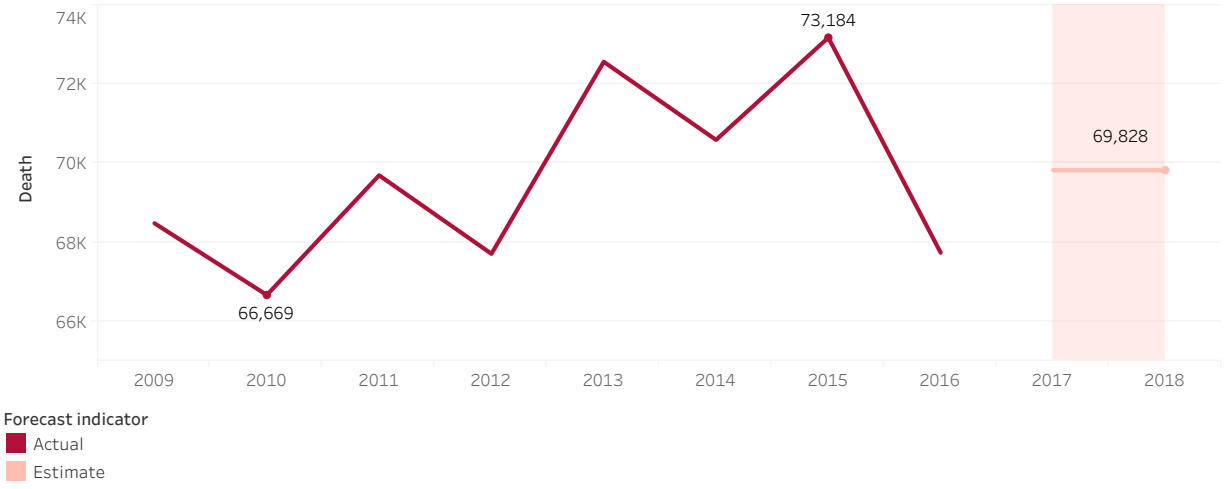
Influenza Season Preparation Analysis

Motivation: During the US influenza season, elevated flu cases lead to heightened hospitalization rates, prompting medical staffing agencies to supply extra temporary personnel for proper patient care, especially among vulnerable groups.

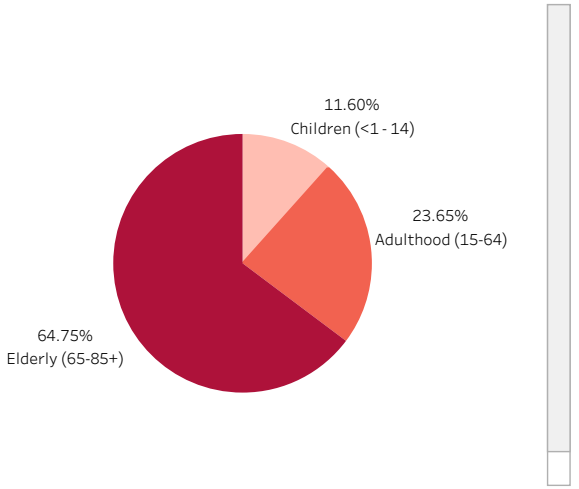
Objective: Conducting an analysis will aid a medical staffing agency in preparing for the heightened demand during the influenza season by studying influenza trends to proactively plan and allocate temporary staff to clinics and hospitals as needed.

Scope: This analysis project aims to plan for the upcoming influenza season by encompassing all hospitals across the 50 states of the United States.

Influenza Deaths in the US Over Time

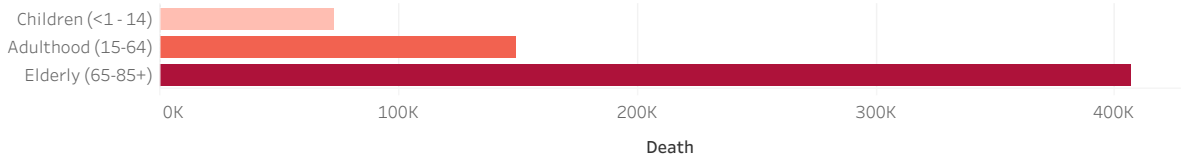


Influenza Distribution by Age Group



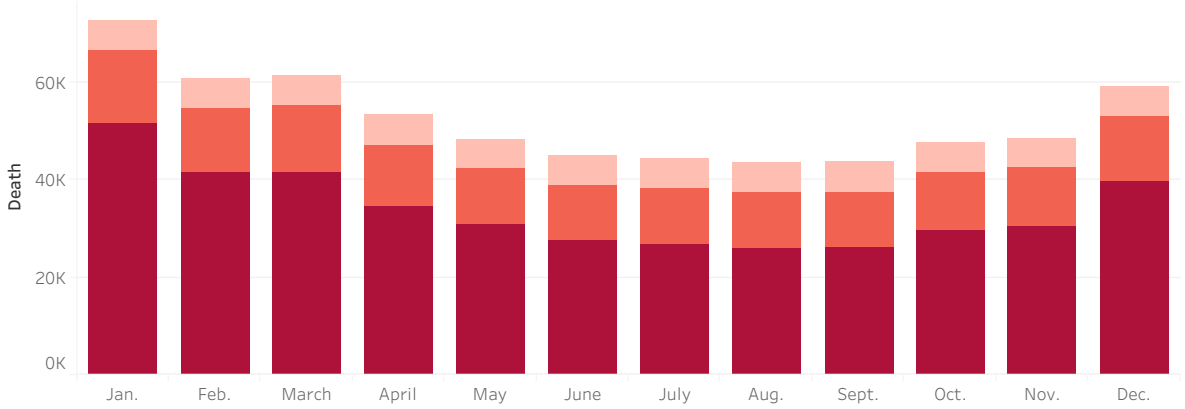
Influenza Impacted Demographic and Season

Influenza Death by Age Group



In this bar chart, I have grouped ages into 3 groups, Children, Adulthood, and Elderly. Although Adulthood covers majority of the ages, the elderly population is showing the highest influenza death rate .

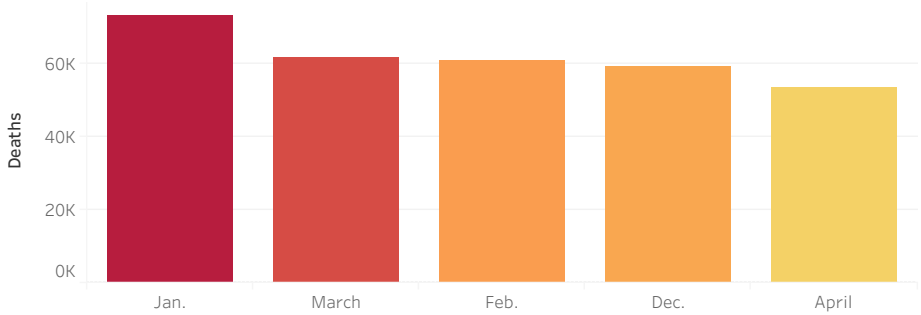
Monthly Influenza Death by Age Group



In this column chart, I have analyzed monthly influenza deaths by age groups with the same colors as the previous chart. Looking at the chart, I found the observation that there is an inlfuenza influx during the months of December to March.

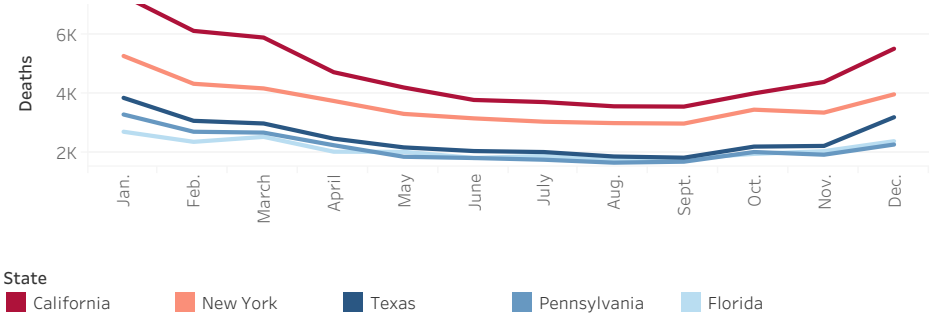
Is Influenza Season consistent throughout the United States?

Top 5 Influenza Months



This visualization shows the top 5 months with the highest influenza rates. All 5 months are consecutive starting in December to April. This shows that inlfuenza rates shows a consistent pattern thorughout a year.

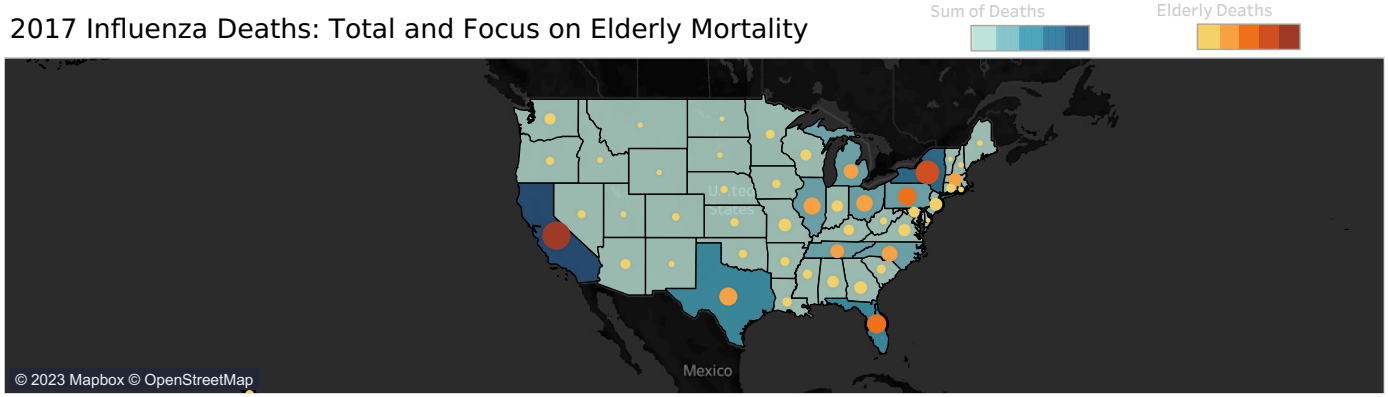
Top Influenza States by Month



This temporal visualization represents the top inlfuenza states by month. There is a clear consistent pattern among all of the states, thus furthering the conclusion that there is a consistent inlfuenza season pattern in the United States from December to March.

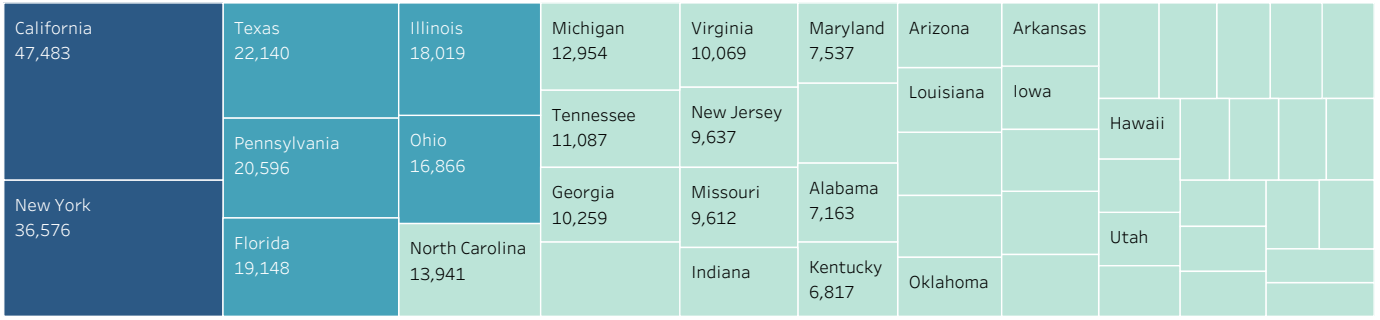
Influenza Season in the US

2017 Influenza Deaths: Total and Focus on Elderly Mortality



This visualization represents 2017's influenza rates in the United States. the blue shading represents total influenza rates and the orange cirlcles represent elderly deaths due to influenza.

Influenza Death by Age and State (65+ vs under 65)



The tree map represents all 50 states with the highest elderly influenza rates. An interesting insight discovered is that states with a high density population (California and New York) contain the highest among total and elderly influenza deaths.

Staffing Plan, Next Steps, and Data Limitations

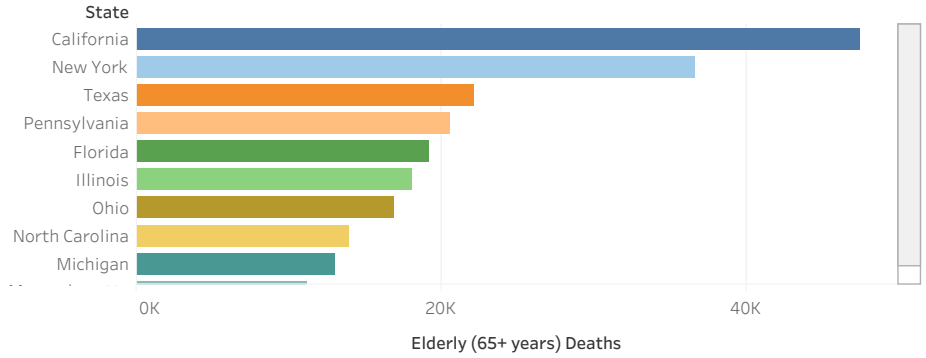
Staffing Plan

1) Send staff accordingly by high, medium, and low vulnerability states.
   a. High Vulnerability - **California and New York**
   b. Medium Vulnerability - **Texas, Pennsylvania, Florida, Illinois, and Ohio**.
   c. The rest of the states are categorized as low vulnerability states.
2) During influenza season ,**December to March**, send additional staff to supplement higher cases of influenza

Next Step Actions

1) Measure Key Performance Indicators such as Elderly Deaths in each state through the upcoming influenza season.
2) Gather data and create analysis on each state's actions to prevent future influenza. (ex. vaccines, exercise, and diet)
3) Create a survey analysis to hospital patients and staff during the upcoming inlfuenza season to measure success of staffing plan.

Top 10 Highest Elderly Influenza Rates by State



Top 5 Influenza Months