Preparing for Influenza Season

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Influenza Season Staffing

Industry: Healthcare

Objectives

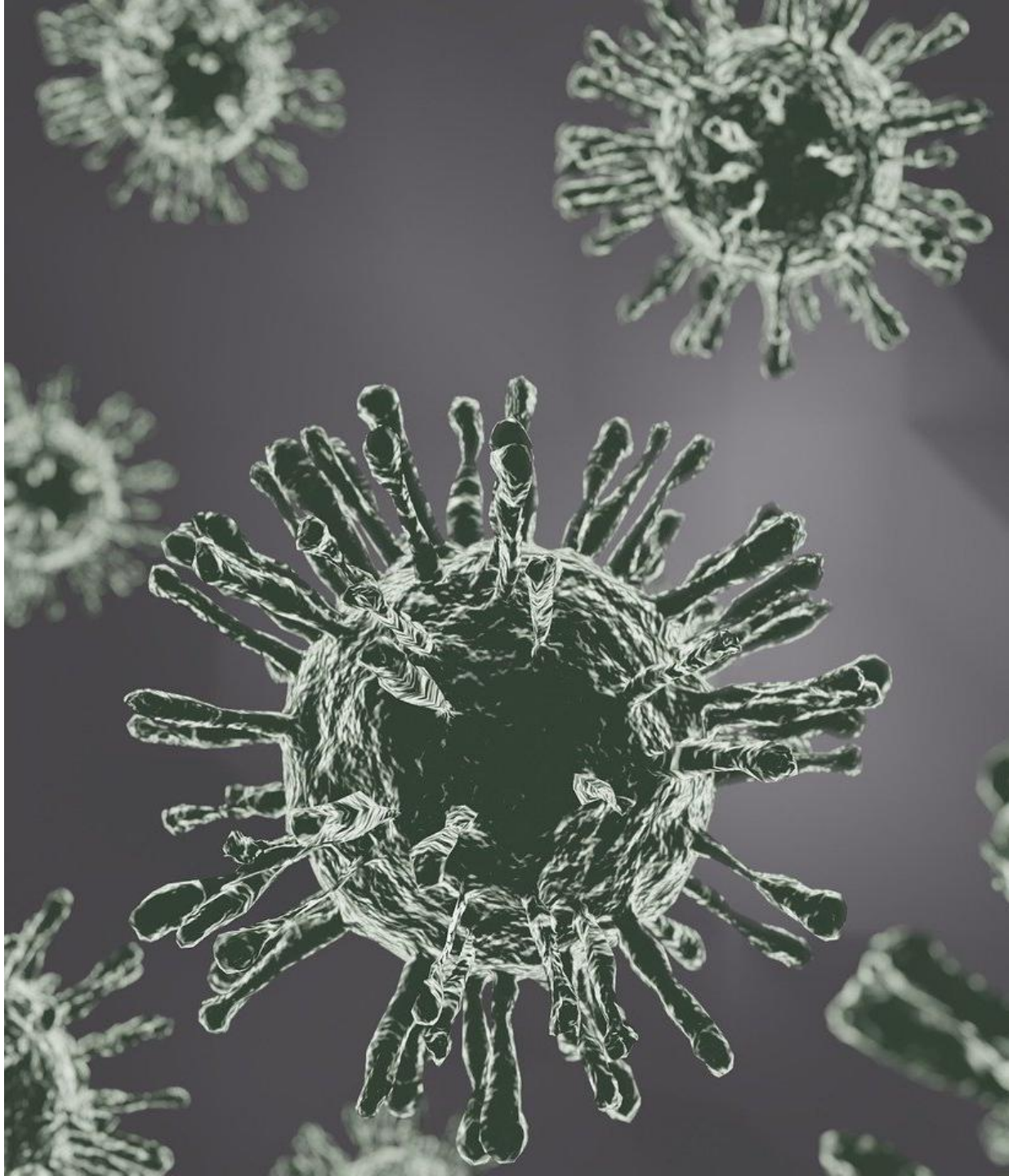
- Create a staffing plan that adapts to influenza mortality patterns in the US.
- Identify high-risk states and peak flu seasons.
- Optimize workforce without increasing resources unnecessarily.

Data Sources

- CDC Data: Influenza mortality by state.
- US Census Data: Age distribution and population.
- CDC Flu Vaccination Survey: Vaccination rates in children.

Tools

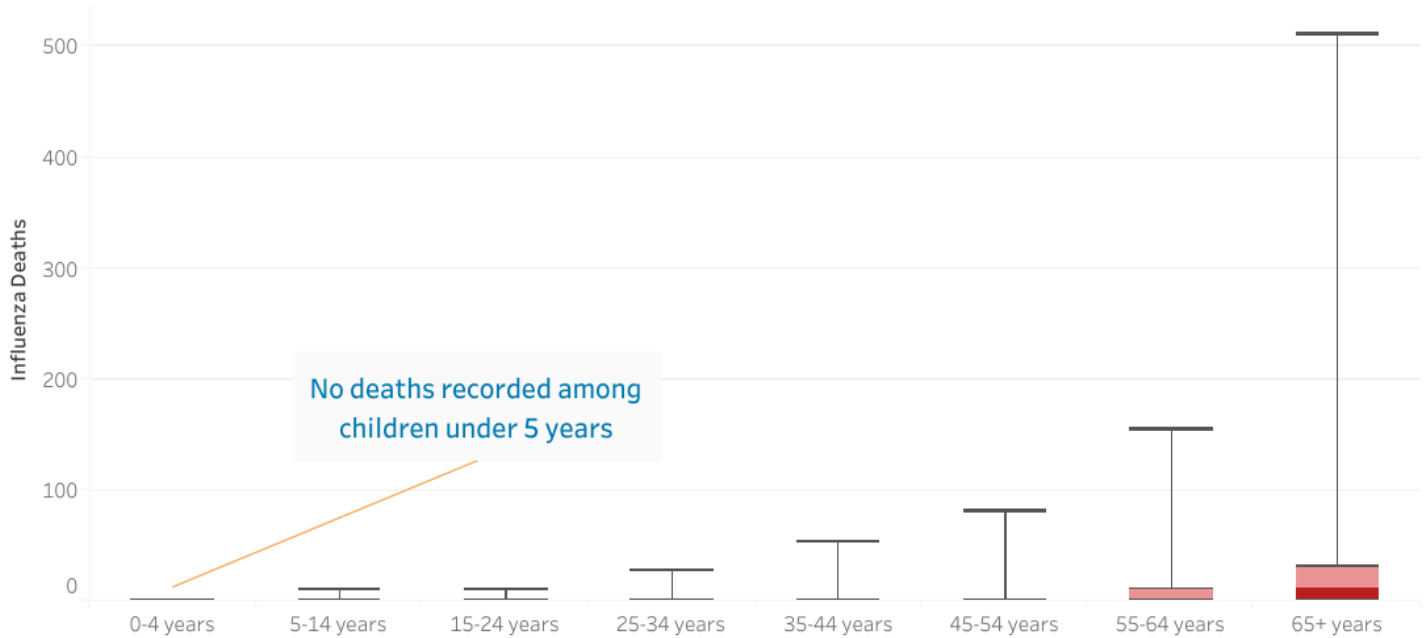
- Python, Tableau, Excel



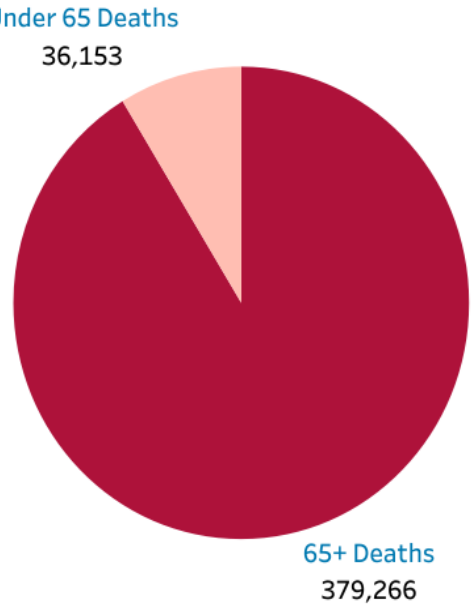
Who is most at risk?

Vulnerable popultions:
Adults 65+, children under 5 years, and pregnant women, as well as individuals suffering from serious health conditions.

Influenza deaths among different age groups (2009-2017)



Influenza mortality among under 65 and 65+ age groups

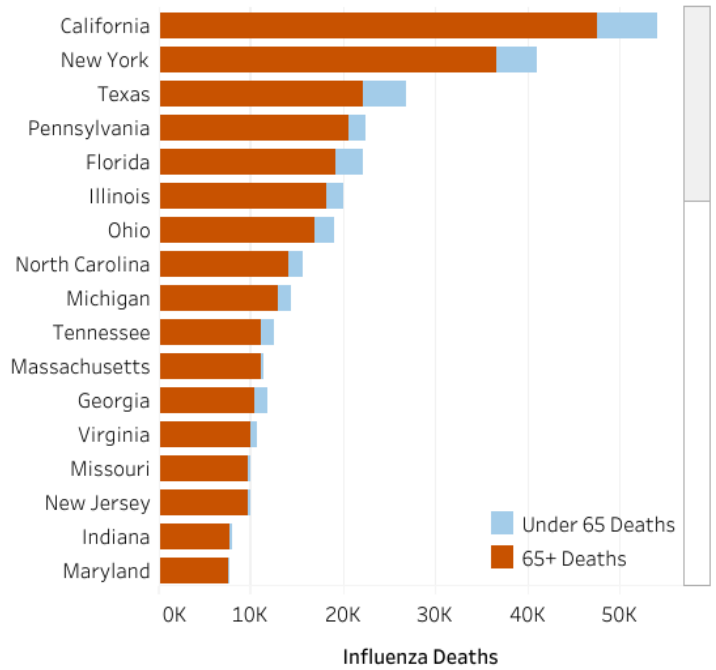


The biggest proportion of influenza fatalities were 65+ years of age. This age group is the most significant vulnerable population that we need to plan for.

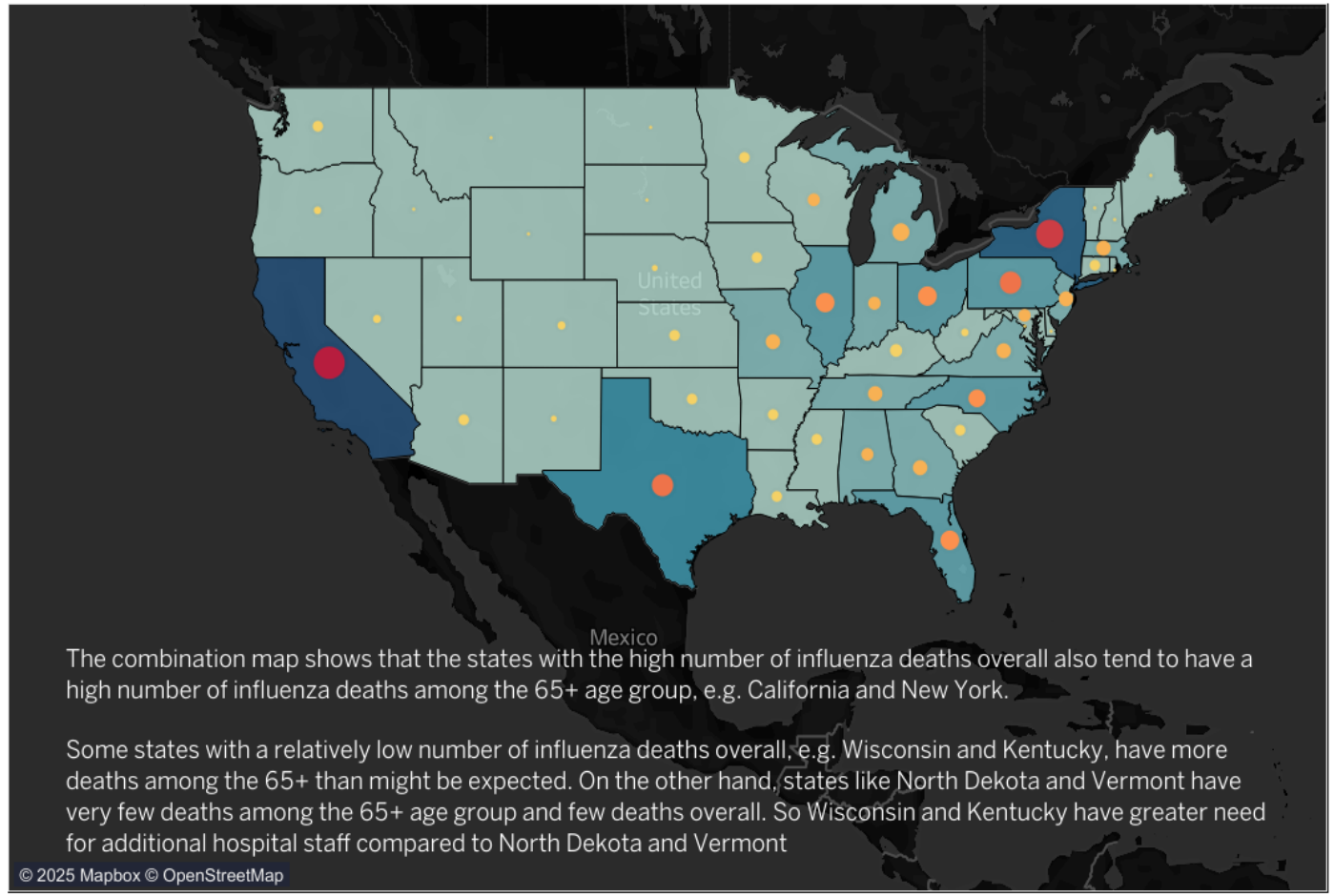
Where is additional staff needed most ?

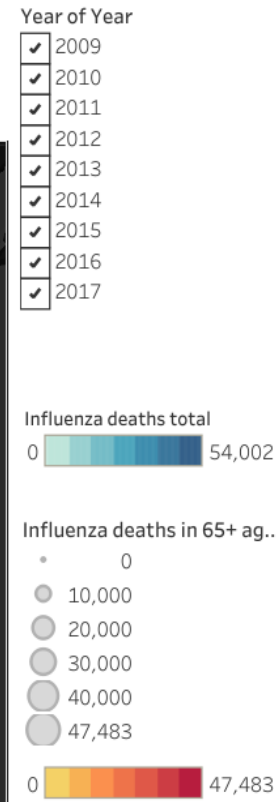
California, New York, Texas, Pennsylvania and Florda are the top 5 states for total influenza morality and influenza mortality among people aged 65 and over.

These states will need the biggest number of additional hospital staff in order to reduce mortality rates in the upcoming flu season.

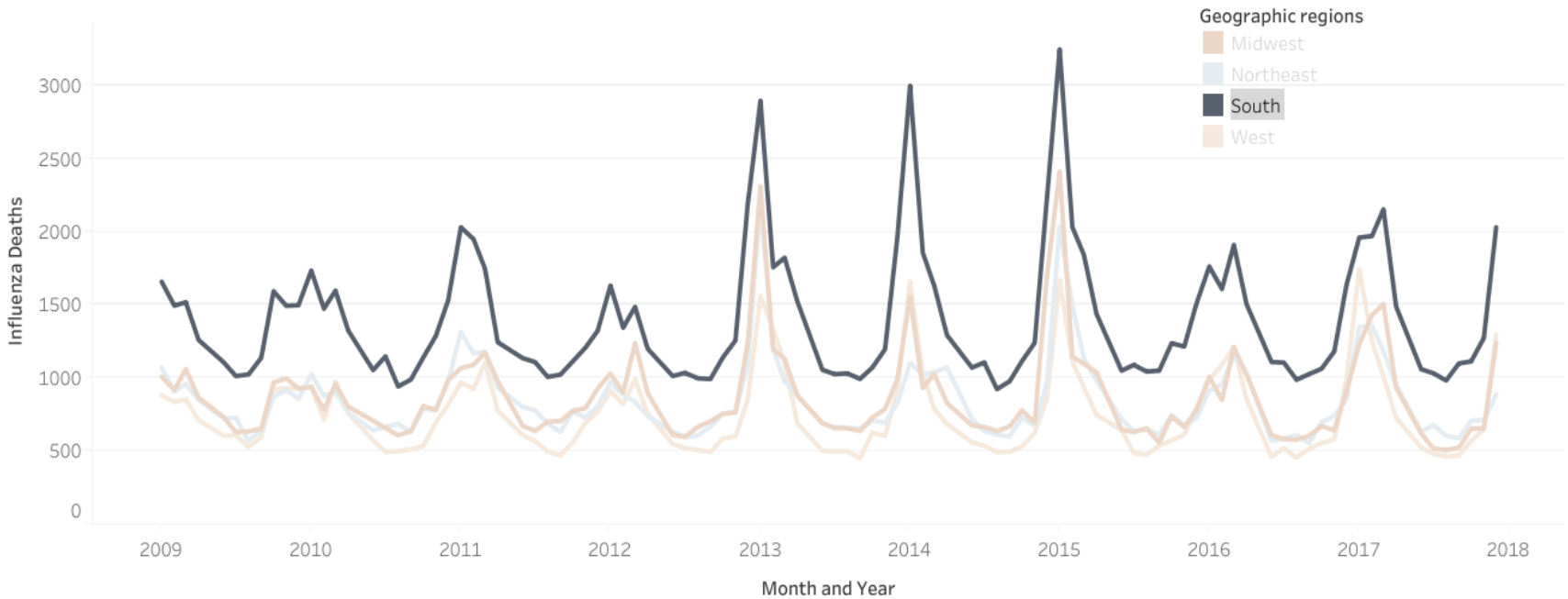


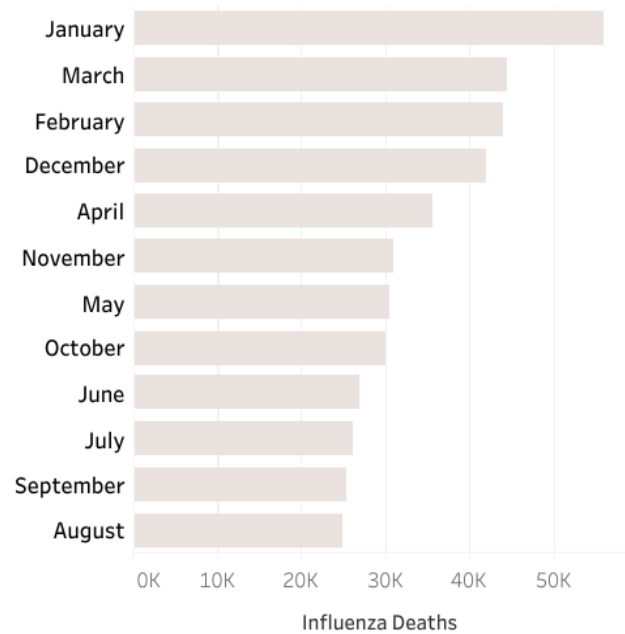
Influenza deaths among the total population and the 65+ age group in years 2009-2017





When is additional staff needed most ?





Across the US regions, influenza mortality peaks in winter and dips in summer.

Interestingly, the South, which includes warm states such as Texas and Florida, has the most dramatic change in influenza mortality across the seasons.

The months with the highest mortality are **January, March, February and December**.

These months will require the biggest increase in the hospital support staff provided.

Preparing for Influenza Season

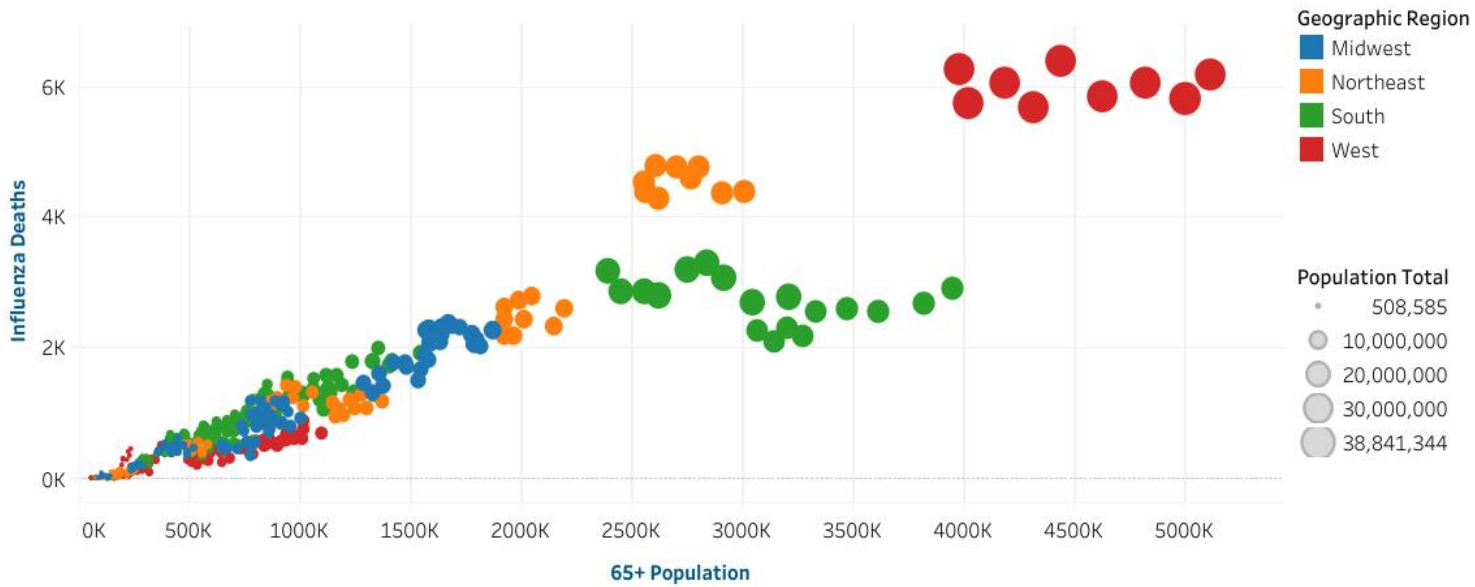
Conclusions

To prevent as many influenza deaths as possible, biggest numbers of medical staff will be provided:

For whom: Counties with biggest populations of adults aged 65 and over

Where: California, New York, Texas, Pennsylvania and Florda

When: December to April



Thoughts for the future

As can be seen from the bubble chart, in areas with the largest populations of adults aged 65 and over, bigger population does not nessarily means more influenza deaths

It needs to be investiated what other factors apart from the size of the vulnerable population contribute to influenza hospitalizations and mortality

One of the factors that is likely to contribute is flu vaccination rates. It is possible that flu vaccinations is the reason why under 5s are no longer a vulnerable group for influenza mortality