PORTFOLIO PRESENTATION

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P2- PREPARING FOR THE INFLUENZA SEASON IN THE US

Business Challenge

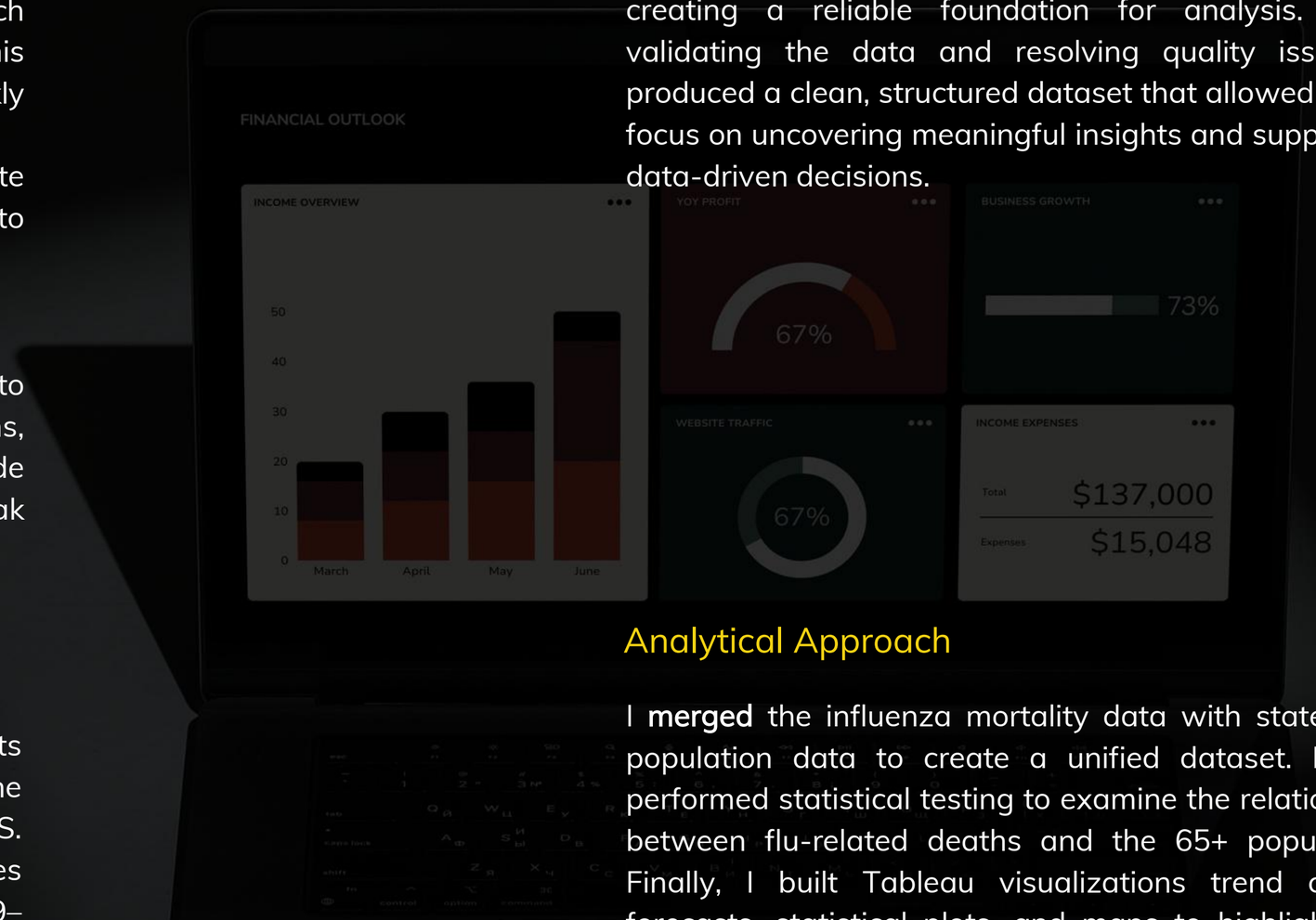
Seasonal influenza puts heavy pressure on healthcare systems, especially because adults aged 65+ face much higher mortality rates than younger groups. This increase in severe cases requires hospitals to quickly scale their staffing.
Medical staffing agencies must therefore anticipate where additional personnel will be needed most to protect vulnerable populations.

Analysis objective

Analyze state-level flu-related deaths from 2009 to 2017.Focus on mortality among vulnerable populations, especially adults aged 65+.Use visualizations to guide staffing decisions and resource allocation during peak flu seasons.

Data overwiew

Influenza Mortality Data (CDC): Provides annual counts of flu-related deaths by state and age group in the United States from 2009 to 2017.Population Data (U.S. Census Bureau): Offers detailed population estimates by age group, state, and county for the same 2009–2017 period



Data Cleaning

I ensured both datasets were accurate and consistent, creating a reliable foundation for analysis. After validating the data and resolving quality issues, I produced a clean, structured dataset that allowed me to focus on uncovering meaningful insights and supporting data-driven decisions.

Analytical Approach

I **merged** the influenza mortality data with state-level population data to create a unified dataset. I then performed statistical testing to examine the relationship between flu-related deaths and the 65+ population. Finally, I built Tableau visualizations trend charts, forecasts, statistical plots, and maps to highlight key patterns and geographic differences.

ANALYSIS & FINDINGS

Our analysis highlights three key insights that directly inform staffing decisions:

1.Vulnerable Population: Age 65+

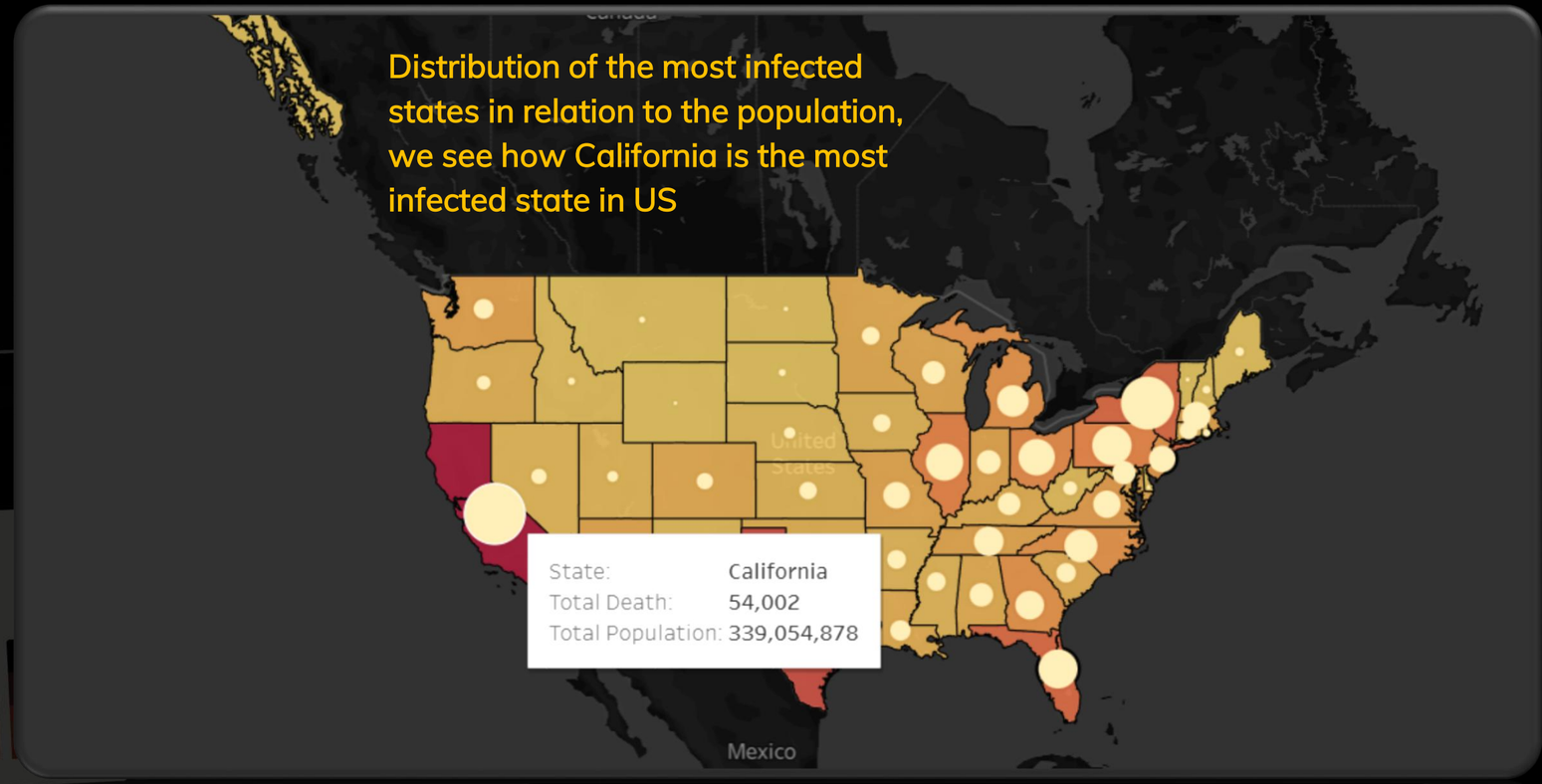
Mortality rates are highest among individuals aged 65 and above, making geriatric care the primary staffing priority during influenza surges.

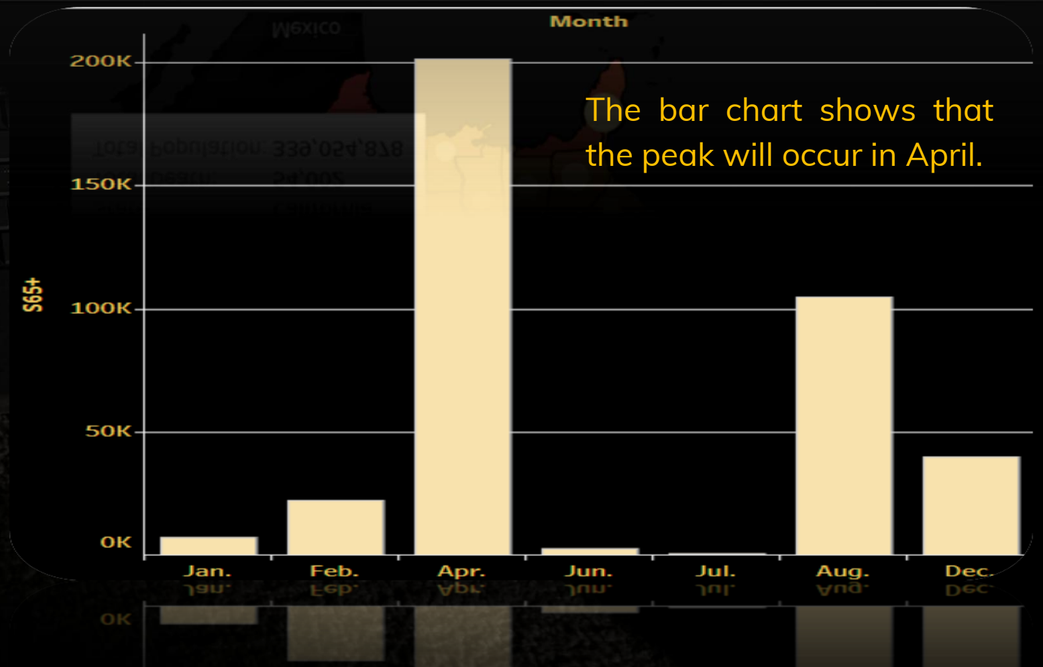
1.Geographic Pressure Points

Spatial analysis shows that California, New York, and Texas face the highest influenza-related death counts. Their large populations and high mobility intensify transmission and increase pressure on healthcare systems.

1.Seasonal Peaks

Historical trends identify April as the month with the highest mortality peak, followed by August and January. These periods represent the most critical windows for reinforcing staff capacity.





KEY INSIGHTS AND STRATEGIC ACTIONS

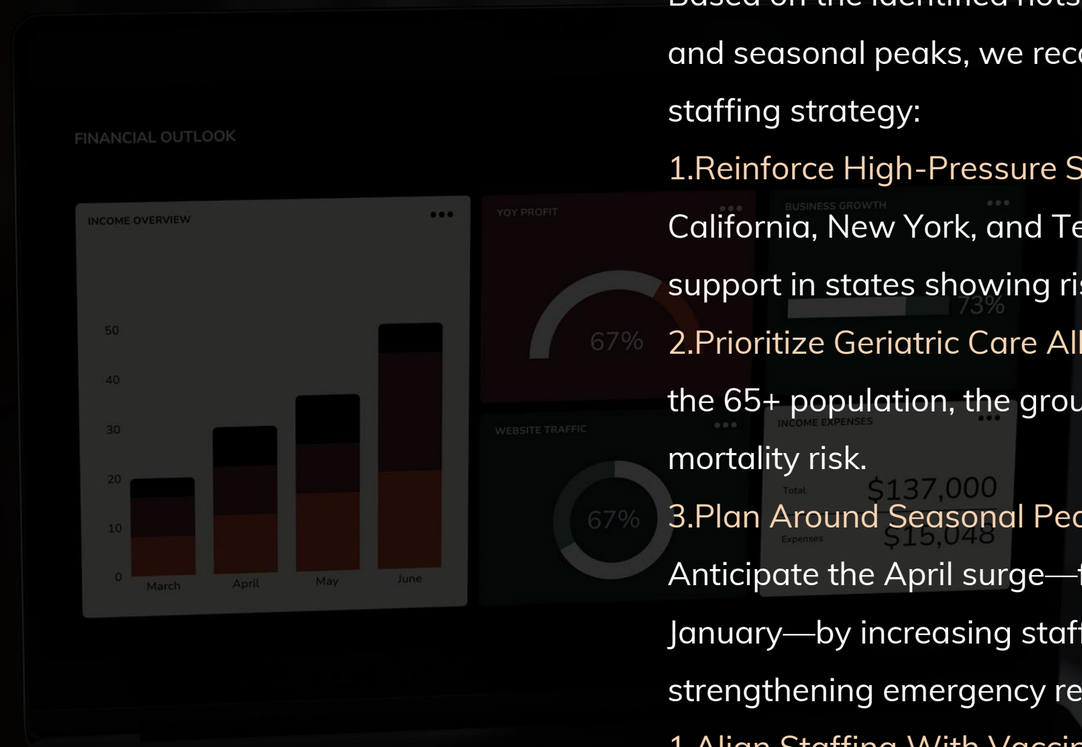
Overall Insight

Influenza pressure is driven by a combination of age vulnerability, population density, economic activity, and seasonal timing.

Understanding these patterns allows us to anticipate where and when staffing needs will be most urgent.

Next Steps

Move from analysis to action by implementing a predictive staffing model, enhancing data collection, and establishing seasonal preparedness protocols to protect vulnerable populations and reduce hospital overload.



Recommandations

Based on the identified hotspots, vulnerable groups, and seasonal peaks, we recommend a targeted staffing strategy:

1.Reinforce High-Pressure States Prioritize staffing in California, New York, and Texas, while maintaining support in states showing rising demand.

2.Prioritize Geriatric Care Allocate specialized staff to the 65+ population, the group with consistently highest mortality risk.

3.Plan Around Seasonal Peaks

Anticipate the April surge—followed by August and January—by increasing staff availability and strengthening emergency response capacity.

1.Align Staffing With Vaccination Efforts

Coordinate vaccination campaigns with staffing deployment to reduce seasonal pressure and improve prevention.

To see more

Strengths Demonstrated

I often feel each project is my best because I enjoy the work and learn so many new techniques. But this one truly stands out, as I gained strong additional Excel skills and learned how to use Tableau effectively.

Moment of struggle

At the beginning, I faced some difficulties when I started learning Tableau. After several attempts, research, and a lot of persistence, I eventually became comfortable and confident with this new tool...Today I have become fast and I have good control over it.

What Comes Next

I'm planning to apply advanced analytics such as clustering. I'm curious to see what patterns will emerge

Final Thoughts

After completing this project, my curiosity grew even more. I want to explore the dynamics in greater depth, and I find myself asking many new questions. At the same time, I'm proud of what I achieved: thinking back to how raw the dataset was and seeing the final, well-organized results on Tableau Public really shows how far I've come.