Answer 2.9
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Flu Trends Analysis: Insights and Recommendations

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Introduction

Objective: The purpose of this analysis is to look at flu trends in the U.S. from 2009 to 2017. By studying vaccination rates and deaths, I wanted to find ways to improve public health strategies and figure out where more resources or campaigns are needed.

Motivation: The flu is still a big problem for public health. Even with vaccination programs, some states have higher death rates. This analysis digs into patterns over time and across states to find actionable insights.

Key Questions:

1. Which states have the highest flu death rates?
2. Is there a connection between flu shot rates and mortality?
3. How do vaccination rates change over time and by location?
4. What recommendations can help improve flu prevention?

Analysis

Story Point 1: Targeting Flu Prevention: A Data-Driven Approach

Visualization:
Heat Map - Flu Mortality by State (2009-2017)

Description:
This heat map shows total flu deaths by state from 2009 to 2017. States are shaded based on how high their death rates are—the darker the shade, the higher the deaths. When you hover over a state, you can see its vaccination rates.

Key Findings:

- States like California and Texas have higher flu deaths compared to others.
- Places with high death rates often have lower vaccination coverage, which might mean there are gaps in public health outreach.

Purpose:
This map points out areas where better vaccination efforts and resources could make a difference.

Story Point 2: Mapping Influenza Mortality Across States

Visualization:
Dual-Axis Map - Influenza Deaths and Vaccination Rates

Description:
This map combines flu death rates and vaccination coverage. Deaths are shown in shades of red, and vaccination rates are in green. Seeing both metrics together helps show patterns and possible connections.

Key Findings:

- States like Alaska and Montana have good vaccination rates but still see notable deaths.
- States like Mississippi have both low vaccination rates and high death rates, showing where work is really needed.

Purpose:
Looking at both death rates and vaccination coverage together gives a clearer picture of where help is needed the most.

Story Point 3: Analyzing Flu Vaccination Rates Across States

Visualization:
Scatterplot - Flu Shot Rate vs. Mortality Rate

Description:
This scatterplot compares flu shot rates with death rates. The x-axis shows vaccination rates, and the y-axis shows mortality rates. Each state is a point on the chart, and the size and color of the point reflect how severe the deaths are.

Key Findings:

- There's a moderate negative correlation between vaccination rates and death rates (Pearson r = -0.6395).
- Some states, like Alaska, stand out as outliers, which might mean other factors are at play, like access to healthcare or population density.

Purpose:
This chart helps show how effective vaccinations are and points out any unusual patterns that need more investigation.

Conclusions and Recommendations

Key Takeaways:

- States with low vaccination rates and high death rates, like Mississippi, should be prioritized for vaccination campaigns.
- Seasonal trends show that flu deaths spike during certain months, so healthcare staffing should be adjusted accordingly.
- Outliers suggest that factors like healthcare access could be affecting death rates, not just vaccination coverage.

Recommendations:

1. **Boost Vaccination Efforts:** Focus on states with low vaccination rates, especially those with high death rates.
2. **Address Healthcare Access:** Look into healthcare access in high-death areas to see if there are gaps that need fixing.
3. **Plan Staffing Proactively:** Make sure healthcare staff and resources are ready during peak flu months.
4. **Improve Public Education:** Help people understand the importance of getting vaccinated, especially in areas with low rates.

Next Steps:

- Do more detailed analysis to look at things like socioeconomic factors or healthcare access.
- Create more specific maps to find smaller hotspots within states.
- Track trends in real-time to adjust public health efforts as needed.

Tableau Public Story Link

Link to Published Tableau Story

Bonus Task: Community Collaboration

As a trained UX/UI Designer certified through UCF Bootcamp, I know the importance of effective and accessible visuals. I searched for the recommended Slack channels, #ux_taskhelp and #ui_taskhelp, to share my storyboard for feedback. Unfortunately, these channels do not exist.

Instead, I focused on applying my UX/UI training to make sure the storyboard adhered to best practices in accessibility and visual hierarchy. This included:

- **Clear Labels and Descriptions:** Ensuring every chart and map is properly labeled with tooltips to help users understand the data.
- **Color Accessibility:** Using color schemes that are accessible for individuals with color blindness or visual impairments.
- **Logical Flow:** Organizing the story points in a way that guides viewers through the analysis step by step, making it easy to follow the narrative without additional explanation.

By leveraging my design skills, I ensured the storyboard would be accessible, visually appealing, and effective for communicating key insights.