IBIYEYE TOSIN
Data Immersion –Achievement 2
Exercise 2.10

Link to Storytelling on Tableau Public

https://public.tableau.com/shared/R9YWYWDKZ?:display_count=n&:origin=viz_share_link

Outline of data Analysis finds presentation to stakeholder.

I. Project Goal.
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Project Goal.

Goal of the project is help a medical staffing agency that provides temporary workers to clinics and hospitals on an as-needed basis. The analysis will help plan for influenza season, a time when additional staff are in high demand. The final results will examine trends in influenza and how they can be used to proactively plan for staffing needs across the country.

Project Overview

● **Motivation:** The United States has an influenza season where more people than usual suffer from the flu. Some people, particularly those in vulnerable populations, develop serious complications and end up in the hospital. Hospitals and clinics need additional staff to adequately treat these extra patients. The medical staffing agency provides this temporary staff.

● **Objective:** Determine when to send staff, and how many, to each state.

● **Scope:** The agency covers all hospitals in each of the 50 states of the United States, and the project will plan for the upcoming influenza season.

Who are the Stakeholder.

- Medical agency frontline staff (nurses, physician assistants, and doctors)
- Hospitals and clinics using the staffing agency's services
- Influenza patients
- Staffing agency administrators

Data Analysis hypothesis.

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- Patient with age above 65 if infected with Influenza flu have high risk level of death if not well treated and managed. _ "**if patient with age above 65 is infected with Influenza flu they more die from the infection."**

Data sets available for project.

The data sets available for project:

- Influenza deaths by geography (Source: CDC)
- Population data by geography, time, age, and gender Source (US Census Bureau)

Hypothesis Testing

"**if patient with age above 65 is infected with Influenza flu they more die from the infection."**

Dependent variables_ Influenza flu Mortality rate

Independent variables_ Influenza rate of Vulnerable population (65 Year Above) and Non Vulnerable population (5 - 64 years) Age grouping

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null hypothesis_ There is no difference in the Influenza flu Mortality rate between Vulnerable population (65 Year Above) and Non Vulnerable population (5 - 64 years) Age grouping

alternative hypothesis_ The patient with age 65 above if infected with influenza flu have significant higher risk mortality than those Non Vulnerable population (5 - 64 years)

Testing (one-tailed test) _ The test is one way directional test for mortality rate from patient above 65 years in infected by influenza flu

Result

The P(T<=t) one-tail value is 1.02148086405311E-25, the P-value is below the significance level of 0.05, which means we can reject the null hypothesis with a 95% confidence level.the interpreation is that there is a significant difference in the influenza flu mortality rates of the two age group, the influenza flu mortality rate in the Vulnerable Popolution (65 above) and is significant higher than the Non Vulnerable population (5 - 64 years)

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Summarize the results of your test

We have proven that Vulnerable Population (65 above) have a higher chance of dying from the influenza flu than Non Vulnerable population (5 - 64 years).

Visual data Analysis finds

Tableau interaction board.

Conclusion and Recommendations.

Tableau interaction Map with text below.

Conclusion

The highlighted states are states that highly vulnerable to influenza flu during the influenza season and required urgent/priority frontline staff requirement.
The map detailed two level of vulnerability with different color shading as follow:
High(top) risk state with dark orange color
Medium Risk state with light orange color

Recommendation

The High(top) risk state with dark orange color should give higher priority and more is frontline staff allocation during next influenza and follow be Medium Risk state with light orange color.
The affected state is listed below:

High(top) risk state	Medium Risk state
California	North Carolina
New York	Ohio
Texas	Michigan
Pennsylvania	Illinois
	Florida

Next Step

Conduct an investigation to determine underlying risk factor for the high mortality rate for age group 65 above
create a plan that prioritizes the vaccination of Vulnerable Population (65 above)