

Data Analytics Immersion 2.10: Presenting Findings to Stakeholders

Felicia Andersen

TABLEAU PUBLIC STORYBOARD

Reflection on Project Data Limitations and Metrics

- 1. Were there any limitations that prevented you from conducting an analysis? Think of these in terms of a future project or wish list (i.e., “If I had x, I would have been able to do y.”).**

Several things prevented me from conducting a full analysis. For one experience, since I’m still learning, it takes time. Especially as I don’t have any experience in healthcare studies or analyses. Also, the datasets used were not complete, however, that was due to privacy laws for that “suppressed” data if the mortality count was under 10. The age group of 5 and younger didn’t have any data, there were also a few states that had nothing. Revised based on mentor feedback, adding in the patient visit data to show what the ratios are in the 2017/2018 influenza season. Florida did not have any numbers submitted at all for any of the years. I did think about using a calculation based on mortality rates, but seemed to be especially when this is an estimate or placeholder until real figures are known.

Another suggestion and revision were to use the vaccination information, however, it’s only for the age group of 5 years and under. Unfortunately, there is no data to show mortality rates. On the other hand, I had no vaccination information for the 65-year-old and older age group. One cannot link or assume any relationship of one age group to the next when it comes to vaccination rates between the age groups. Leaving the vaccination information as purely a supportive reasoning to get this denoted as a KPI for tracking not just with this one age group, but for all, to see if it lowers the overall visits, hospitalization, and influenza mortality over time. At least this helps tell the story more completely than my original submission.

- 2. Did your data have any limitations that may have affected your results? Consider this in terms of data quality and data bias.**

Yes, some states did not have consistent data, but it was either because it was due to healthcare data privacy laws, counts not being enough to report, or maybe because that state didn’t comply with submitting the data, i.e. Florida. I believe Florida is one of those states that don’t normally conform as the rest of the US does. Perhaps this is due to specific state laws or regulations. However, this may have changed in the past few years, as it seems as though they report that data currently.

- 3. How might you monitor the impact of the staffing changes you recommended?**

By having a follow-up meeting while the influenza season is occurring. That way updates or changes can be made to make it better if needed. Also, it would be to track KPIs and review those after the main influenza season ends. I created KPIs based on some of the information that was already available, vaccination rates to hopefully increase to lower overall mortality and influenza visits/hospitalization. And to have a survey completed by patients, staff, and other stakeholders to show the satisfaction rate(s) from each area. This will also hopefully improve the process with feedback on the changes and make adjustments as needed.

- 4. Is there a metric that could be used for monitoring this impact?**

Some metrics that could be used to help track the successes and failures of this plan are as mentioned above, vaccination rates in all age categories, perhaps in other demographics as well male, females, races, financial stability, overall influenza mortality rates, and patient visits/hospitalization.

2.10 Walkthrough>Speaker Notes for 2017/2018 Influenza Staffing Plan (revised)

Overview:

Updated to include agenda in the same slide, removing the original methodology section.

When is Influenza season?

Influenza is seasonal, looking at time series visualization you can see a pattern of peaks and valleys, confirming this statement. If it were all the same, it would show straight lines across the period which is by month for every year of the dataset.

The bar chart below helps us to visualize the months of the year that the season starts, begins, and peaks. For all states from 2009-2017, influenza starts in November and ends in May. Peak months are December through April (which is determined by being above the average count of influenza deaths)

It's not necessarily the same for every state every year. There are differences. Let's look at Kentucky as an example. This first view shows the overall seasonality, but some years the season starts earlier and ends later. By reviewing this chart, you can look at each state to see what those differences are.

Who is most vulnerable?

As highlighted at the beginning of the presentation, the most vulnerable population in the US are those aged 65 years and older. It's pretty stark by looking at the visualization that the mortality rate of this age group is very high. Helping to identify this group is useful in determining what might be done to help prevent such a high rate in the future.

Where is Influenza most prevalent?

Where do healthcare workers need to be sent during the influenza season? Looking at the combination map visualization on the left, I have illustrated both influenza death counts and mortality rates of those aged 65 years and older. What I'm trying to convey here is that some states might have a higher mortality rate, but a smaller influenza death count compared to other states who might have a lower mortality rate, but a larger influenza death count. Is there a way to balance death counts and mortality rates? A risk score helps us take each of these into account to rank the states with a low, medium, or high risk/priority.

The risk score is calculated by....

The top 25 percentile of the scores is High risk, the middle 50 percentile is Medium, and the bottom 25 percentile is Low.

Recommendations: Weekly Staffing Plan & Vaccinations

Show and discuss the staffing plan based on patient visit data. Breaking down the proposed plan by %, staff counts, and estimated patients week by week. This would cover the 2017-2018 influenza season (week 36 to

week 35). *Note: Florida does not have any data, so used a similar state's population, mortality, seasonality, and risk level (Texas) until final numbers are known to make adjustments.

Vaccination information for those aged 5 years and younger, which are from a small sample of the US population. This gives a good indication of what this age groups' vaccination rates are in the various states. Hopefully to improve upon vaccination rates to lower any risk from this vulnerable group. If this is being used as an example for other vulnerable populations, the same idea could apply to those groups as well.

Conclusions & Next Steps:

Summarize the answers to the project brief questions.

Go over the KPIs to review at the end of the season.