*Project Management Plan for Flu Season*

## Audience Definition

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|  | * **Staffing agency administrators** * Stakeholders who need the analysis for their usage. * **Hospitals & Clinics using Staffing Agency’s services** * Data is needed from the above audience to perform the analysis. * **Medical Agency Frontline Staff (nurses, physician assistants, and doctors)** * Surveying and collecting knowledge from firsthand experience from the above audience is needed to perform the analysis. * **Influenza patients** * Data needs to be collected from above audience to perform the analysis. |

## Stakeholder Communication

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|  | * **Meetings (with all stakeholders):**   \*\*Will happen remotely due to the widespread distribution of all stakeholders\*\*   * An initial kick-off meeting with all stakeholders will be scheduled virtually to discuss the project plan, schedule, deliverables, outcomes, and any information or clarifying questions. * Halfway through the schedule (week 2), there will be a meeting to discuss the progress made so far. * During week 4, there will be a final meeting to discuss whether the project met its goals and whether there are any remaining questions or future steps to take. * **Calls:** * Weekly calls will be made to update stakeholders on the status of the project and answer any questions they have or ask more of my own. * **Written communication:** * Emails will be sent weekly with general updates and achievements to update the stakeholders on the progress being made. * **Emergency/Contingency Plan:** * Any urgent issues will be communicated via email and followed up with a phone call scheduled the next day at 9 am. |

## Schedule and Milestones

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|  | * **Week 1** * **Starting with requirements** * Create a list of data questions that need to be answered during the analysis. * **Designing a Data Research Project** * Design a data research project. * Formulate a research hypothesis. * **Sourcing the Right Data** * Describe the data sets. * Explain the relevance and limitations of each data set. * **Data Profiling & Integrity** * Create a data profile for each of the data sets. * Include information on data types, data integrity issues (accuracy and consistency), any cleaning, as well as summary statistics in each profile. * **Week 2** * **Data Quality Measures** * Implement additional data quality measures to data profiles related to completeness, uniqueness, and timeliness. * **Data Transformation & Integration** * Integrate data from two sources into one cohesive data set using data transformations. * **Conducting Statistical Analyses** * Calculate the variance and standard deviation for key variables. * Identify variables with a potential relationship and test for a correlation. * **Statistical Hypothesis Testing** * Formulate a statistical hypothesis regarding an outcome of interest around two groups. * Conduct hypothesis testing and interpret the results of a hypothesis test. * **Consolidating Analytical Insights (deliverable)** * Create an interim report consolidating the findings of analysis. * **Week 3** * **Intro to Data Visualization** * Explain how data visualizations can be used. * Install Tableau. * **Visual Design Basics & Tableau** * Create a data visualization design checklist. * Explain how the visualizations can be improved. * Connect project data to Tableau. * **Composition & Comparison Charts** * Create a pie, bar, or column chart, as well as a treemap in Tableau. * Use your visualization design checklist to design charts. * **Temporal Visualizations & Forecasting** * Create a time forecast for a variable and display in Tableau. * Use your visualization design checklist to design in chart. * **Statistical Visualizations: Histograms & Box Plots** * Create visualizations that look at distribution of a variable. * Use visualization design checklist to design in chart. * **Week 4** * **Statistical Visualizations: Scatterplots & Bubble Charts** * Create visualizations that look at correlation between variables. * Use visualization design checklist to design in chart. * **Spatial Analysis** * Map a variable and justify spatial visualization choice (heat, density, or choropleth). * Use visualization design checklist to design in chart. * **Textual Analysis** * Create a word cloud using qualitative data. * Use visualization design checklist to design chart. * **Storytelling with Data Presentations** * Create a narrative to communicate research findings and insights in relation to research goals. * Publish analysis as a Tableau Storyboard. * **Presenting Findings to Stakeholders (Deliverable)** * Present a data story by recording a video presentation for stakeholders. |

## Project Deliverables

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|  | * **Week 2:** Create an interim report consolidating analytical findings. * **Week 4:** Present data story by recording a video presentation for stakeholders. |

## Context

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|  | * **What are the vaccination rates for the flu in each state?** * **According to** [**KFF**](https://www.kff.org/other/state-indicator/flu-vaccination-rate/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D)**, the values listed in the table are the flu vaccination rates for each state in 2020-2021 for anyone older than 6 months.** * **How does each state raise awareness about the flu season and flu shots?** * **How many medical staff are available at hospitals/clinics per state?** |

## Possible Hypotheses

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|  | **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 flu season.  1. If more people aged 65 & older (elderly population) were to receive the flu vaccine, then the mortality rate will be lower for this populations.  2. If a patient is an elder (age 65 years or older), then the risk of mortality will be higher.  3. If younger and middle-aged people receive the flu vaccine, the transmission rate will be low.  4. If a state has higher proportion of vulnerable populations, then more medical staff will be required. |

## Data Wishlist

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|  | * Age populations data of each state * Vaccination rates of each state broken down by age groups * Mortality rates of each state broken down by age groups * Mortality rate of flu patients with vaccination status of each state * Percentage of hospitalizations due to flu of each state * Current hospital and clinic staffing of each state |