**Executive Summary**

*This project is comparing the adverse effects of covid 19 vaccine with other vaccines. Motivation behind this subject is to understand the adverse effects of vaccine when it is developed in a short time vs. have enough time for research. It will mainly focus on severe side effects questioning the efficacy of the vaccines. It will be based upon age, gender, vaccine dose, manufacturing company. The dataset originally had Europe data as well but they deleted it. Therefore there are empty rows in the dataset. Also, dataset has a subjective symptoms column which is a big paragraphs.*

**Motivation**

*When the covid 19 vaccine got approved, the whole world had a negative perception about it and main focus was on pointing out the duration of research put in to the vaccine development. Majority of people did not want to take the vaccine considering the adverse effects of vaccine and thinking that vaccine came too fast. Now after 3 years of vaccine availably, we can compare the other vaccines with covid 19 vaccine and analyze the adverse effects for the same. I am curious to know if there are any severe symptoms after vaccine administration requiring ER visits or may be death? (168 entries for death in year 2022) I would like to compare these adverse effects and see if more time is put into vaccine development reduces the adverse effects or it’s the same.*

**Data Question**

*Present your question. Feel free to include any research/articles that are relevant or show where others have attempted to answer this question.*

1. *Serious side effects needing hospitalization from vaccination.*
2. *Mortality rate after vaccination.*
3. *Effects of vaccines based on gender, state.*
4. *Age groups affected the most.*
5. *Most common adverse effects/ symptoms per vaccine administered.*
6. *2020, 2021, 2022 trend of negative effects % per vaccine.*
7. *% of ER visits for severe symptoms*

**Minimum Viable Product (MVP)**

*Define your MVP. This should be a description of what your final capstone will look like, including visualizations, how the analysis will be presented, who the intended audience is, etc.*

*Final capstone ideas.*

1. *Breakdown of negative/adverse effects bar chart with all vaccines and compare covid 19 vaccine with flu vaccine or TB vaccine.*
2. *See the difference between adverse effects based on manufacturing company for covid 19 vaccines.*
3. *% Of deaths reported after vaccination compare covid with flu.*
4. *Most common symptoms found after vaccination.*
5. *Severely affected age group after vaccination.*
6. *Correlation chart of age and Severe symptoms or deaths*

**Schedule (through <date of demo day>)**

1. Get the Data (1/2022)
2. Clean & Explore the Data (12/8/2022)
3. Create Presentation of your Analysis (12/20/2022)

* Should be a presentation, but could include a Jupyter Notebook or dashboard in Excel, Tableau, or PowerBI

1. Internal demos (12/27/2022)
2. Demo Day!! (01/05/2022)

**Data Sources**

*Document the data you use and the source of that data*

[*https://vaers.hhs.gov/data/datasets.html*](https://vaers.hhs.gov/data/datasets.html)

[*https://wonder.cdc.gov/controller/datarequest/D8;jsessionid=33E0BA7020ED02E068D9B80D91A3*](https://wonder.cdc.gov/controller/datarequest/D8;jsessionid=33E0BA7020ED02E068D9B80D91A3)

[*https://www.fda.gov/vaccines-blood-biologics/vaccine-adverse-events/vaccine-adverse-event-reporting-system-vaers-questions-and-answers*](https://www.fda.gov/vaccines-blood-biologics/vaccine-adverse-events/vaccine-adverse-event-reporting-system-vaers-questions-and-answers)

**Known Issues and Challenges**

*Explain any anticipated challenges with your project, and your plan for managing them.*

* + - 1. *Data cleaning and dealing with black columns.*
      2. *Analyzing in a timely manner to provide concrete results.*