Scoping Document

Goals – Define the goal(s) of the project. What questions are you hoping to answer?
- Determine levels of readmission and mortality rates for certain conditions
    - Is there a large discrepancy between different healthcare providers, or is it relatively consistent?
        - Healthcare providers have relatively consistent levels of readmission and mortality
            - It is far more reliant on the condition itself
    - Do certain conditions need to be diagnosed and treated in fewer visits?
- Identify correlations between location of hospital with patient readmission
    - How county population demographics impact patient readmission
        - Better than National Rate- Less readmissions
        - Worse than National Rate- More readmissions
        - Higher scores seem to be associated with hospitals that had worse readmission rates
        - Hospitals that had better than National Average- A lot in cities (populous areas)
        - Also a lot on populous areas
            - Limitations: The data we have is very voluminous, but it makes the data points too diverse to identify some correlations
- Determine key factors that impact readmission to hospital, including outliers
    - Staff satisfaction- No direct way to determine staff satisfaction
    - Shortage of healthcare workers?
    - Resources
    - Lack of health insurance- no way to determine that directly from data

Data Collection – What data do you need to answer your questions? What data do you have access to?
- US Healthcare provider readmission and mortality rates:
    - https://www.kaggle.com/datasets/thedevastator/us-healthcare-readmissions-and-mortality?resource=download
- US county demographics

Analysis – What patterns would you hope to show? How will you describe the data? Are there any columns that can be predicted?
- Patterns between readmission and mortality rates for certain conditions
- Less patient readmissions
    - Hospitals located in wealthier areas
- More patient readmissions
    - Hospitals located in bigger cities
        - This might be a different case for hospitals located in bigger cities, but have more funding, recent technologies, and a good number of healthcare workers
    - Hospitals located in poorer areas
    - Hospitals in rural areas

Ethical Considerations – How can this project support inclusion and equality? Are there similar cases, either historical or ongoing? How did these projects navigate the ethical issues around data collection or usage?

- Things that can't be explained with the data
  - Medical errors
  - Lack of follow up care
  - Incomplete treatment
  - Communication with patient
  - Amongst many other factors