# Meaningful Report Title

*your name*

*date*

## Instructions:

**Delete the Instructions portion from your final write-up. The report you submit should look like a professional report you would submit for work. The objective of the final is to develop a professional report using the tools and techniques you have learned in the first half of the class. It extends upon the midterm including a simple predictive model. A grading rubric is provided, please reference it closely for guidance on writing your report.**

This report will require you to use the medicare data (claims and providers) that was provided via email.

**Your report should:**

1. Include 5 sections - section headers are provided below. Include subsections as needed.

2. Discuss any data import and cleaning challenges.

3. Use plots and descriptive statistics, compare the total submitted (avg.chrg.amt), allowed (avg.allowed.amt), and payment (avg.payment) by potential explanatory variables (entity.code and prov.type). Interpret your results. (Include in Section 3)

4. Using only the payment data from 2012 - 2016, develop a predictive model for medicare payments (avg.payment) in 2017 using the explanatory variables entity type (entity.code), provider type (prov.type). Compare your result to the 2017 data in a meaningful plot. (Include in Section 4)

5. Develop at least one additional research question and investigate it using the data provided. (Include relevant elements in Section 3 and 4)

6. Write a concluding section that summarizes your resuls and future research ideas.

**Required:**

- The final product that you turn in must be a .pdf file with a coresponding .rmd file.

- All plots, tables, and other types of figures should look as professional as possible. You should have appropriate titles, x- and y- labels, and legends (if necessary). All plot elements should be clear and easy to read. Go beyond the bare minimum and read further on how to customize your plots and tables.

- The report should no more than 10-12 pages in length depending on figures and tables.

## Overview

## Data Overview

## Research Questions & Exploratory Data Analysis

This section should include the plots from item 3 above as well as any additional plots or descriptive statistics required to support the additional research question you select.

## Statistical Analysis

This section should include the analysis from item 4 above as well as any additional analysis required to support the additional research question you select.

## Conclusions and Future Work