**Capstone Project 1 Proposal**

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**Project Title**

Medicare Provider Utilization and Payment Prediction.

**Project Objective**

The object of the project is to study and compare if there is any difference between average medicare allowed amount and average medicare payment amount. Furthermore to study the most and least charged and providers as well as the procedures involved drugs. Moreover, factors that influence charge amount and medicare payment will also be investigated.

**Scope and Background of Research**

The dataset is prepared by The Centers for Medicare & Medicaid Services (CMS), the Provider Utilization and Payment Data Physician and Other Supplier Public Use File (herein referred to as “Physician and Other Supplier PUF”), with information on services and procedures provided to Medicare beneficiaries by physicians and other healthcare professionals.

The Physician and Other Supplier PUF contains information on utilization, allowed amount and Medicare payment, and submitted charges organized by National Provider Identifier (NPI), Healthcare Common Procedure Coding System (HCPCS) code, and place of service. The data in the Physician and Other Supplier PUF cover calendar years 2012 through 2015 and all claim adjustments have been resolved.

The goal of the project is to understand payment from Medicare Service and Providers in California State according to the procedures or physicians, and thus the client can utilize the information to develop optimal strategies according to their needs.

**Research Methodology**

1. Use Exploratory Data Analysis to explore the data and compare the charge between medicare payment and provider submitted payment.
2. Run regression model to determine what features influence the physician payment/ medicare payment.
3. Train a model to determine if the new case’s category, i.e. how much would it be expected to be charged.