Capstone Project Proposal

Hospital financial success is increasingly tied to data regarding patient satisfaction. The proposed capstone will reveal how hospitals can focus their efforts to increase patient satisfaction and thereby profitability.

The capstone will focus on HCAHPS survey data. API Healthcare [states](https://apihealthcare.com/sites/default/files/MC_CL_PAS_PPA_0000000001.pdf):

“Patient satisfaction carries the promise of big rewards and the risk of big penalties. The most commonly used measure of patient satisfaction is the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). Through the HCAHPS survey, patients answer 32 questions to rate their inpatient stay. Based in part on these scores, hospitals can either lose or gain up to 1.5% of their Medicare payments in fiscal year 2015. CMS will increase the stakes over the next couple of years, with 2% of reimbursement dollars ultimately being at risk by fiscal year 20173 .

Value-based purchasing programs and HCAHPS scores are estimated to place at risk an average of $500,000 to $850,000 annually per hospital. That risk can be turned into reward: Press Ganey reports that a hospital with $120 million annual revenues can improve patient satisfaction and realize an estimated $2.2 million to $5.4 million in additional revenue annually.

There is also a direct link between HCAHPS scores and profitability. Based on data from 3,035 U.S. acute-care hospitals, 25% of hospitals with the highest HCAHPS scores were also the most profitable with a mean margin of .93, with the low performers for patient satisfaction The Link Between Profitability and HCAHPS Scores showing significantly lower profitability with a mean margin of -4.59. In fact, only the hospitals in the top quartile for patient ratings showed a positive profit margin.”

The HCAHPS survey results published on Data.Medicare.Gov will be analyzed to determine correlations between various survey categories and overall satisfaction. Different categories of the survey such as pain management, doctor communication and hospital cleanliness will be contrasted against whether patients would or would not recommend the hospital to a family or friend. By exploring these correlations we should be able to develop an idea of how the various factors that the HCAHPS measures impact the overall patient satisfaction.

The deliverables for the project will include a Jupyter notebook with all code and data manipulation, as well as a slide presentation that presents:

1. Problem and data description
2. Relevant data visualizations of discoveries
3. Recommendations for hospitals