Executive Summary:

For my project, I created a machine learning model that predicts individual physicians total annual Medicare prescription drug cost. In order to recognize physicians who, have annual prescription drug costs much higher than expected. The data uses over 50 features that Medicare gives for each doctor. Different features pertain to the specific health demographics of physician’s patient population, number of prescriptions prescribed, physician’s specialty and much more.

            The results of this project are important because health care and particularly pharmaceutical costs in the United States are massive. Largely driven by the costs of brand name drugs there are many financial and economic reasons to monitor physician drug costs.

After concluding my project, I had a coefficient of determination of 65%. This indicates that 65% of the total annual drug costs could be concluded from the provided variables. As a secondary way of figuring out how effective the model was, I calculated the percentage of physicians who’s total annual prescription drug cost were no higher than a specific percentage above our prediction. Of note over 83% of physicians were no higher than 50% above our prediction

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| --- | --- |
| Percentage of predicted annual prescription costs | Doctors with drug costs below threshold |
| Within 120% of predicted prescription costs | 63.1% |
| Within 140% of predicted prescription drug costs | 79.5% |
| Within 160% of predicted prescription drug costs | 88.2% |
| Within 180% of predicted prescription drug costs | 92.8% |
| Within 200% of predicted prescription drug costs | 95.6% |

## **Featured Notebooks/Analysis/Deliverables**

Medicare\_Rx\_Slides.PPT

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