

Predicting Individual Healthcare Cost Depending on Type of Treatment Needed

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How Much Do Patients Pay Annually in the US?

- Average Annual Cost: \$10,345 (2016, cnbc)
- Average Annual Cost with Employer-Sponsored Insurance: \$5,892 (2018, hcci 2018)

Relationship Between Treatment and Cost

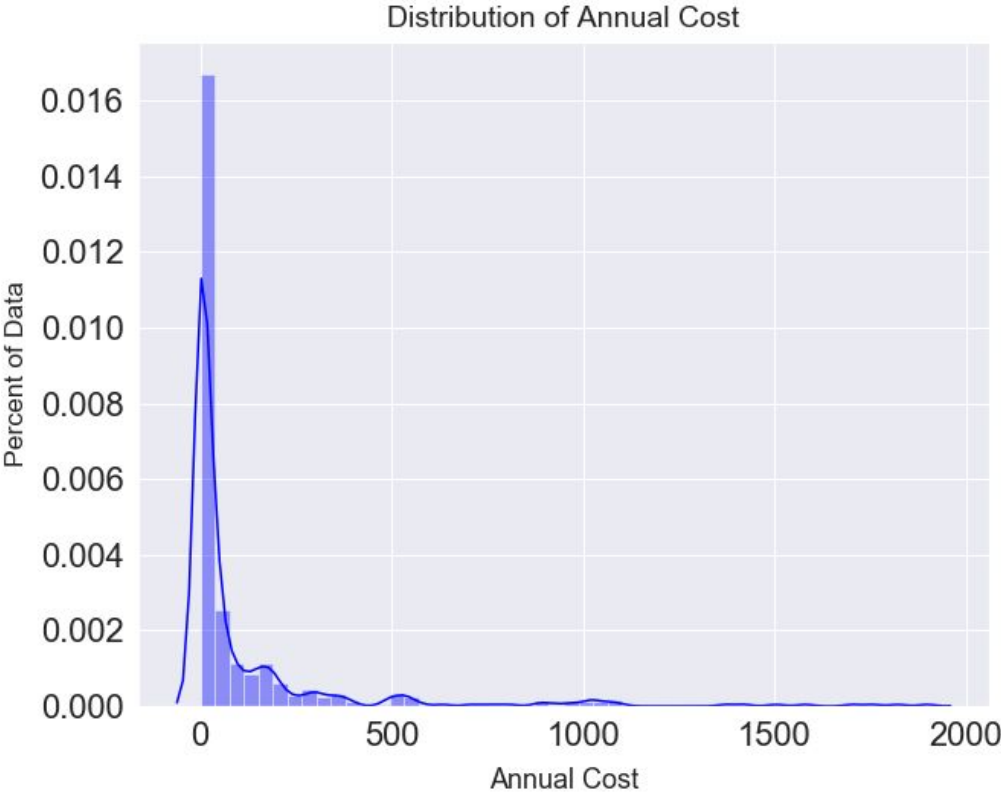
- Knowing the treatment(s) that a person received and other general data about that treatment
 - How much should the patient expect to pay annually under an employee-sponsored plan?

Data

- National averages of treatment costs between 2014 - 2017
 - Additional information on breakdown of costs and how they compare to previous years
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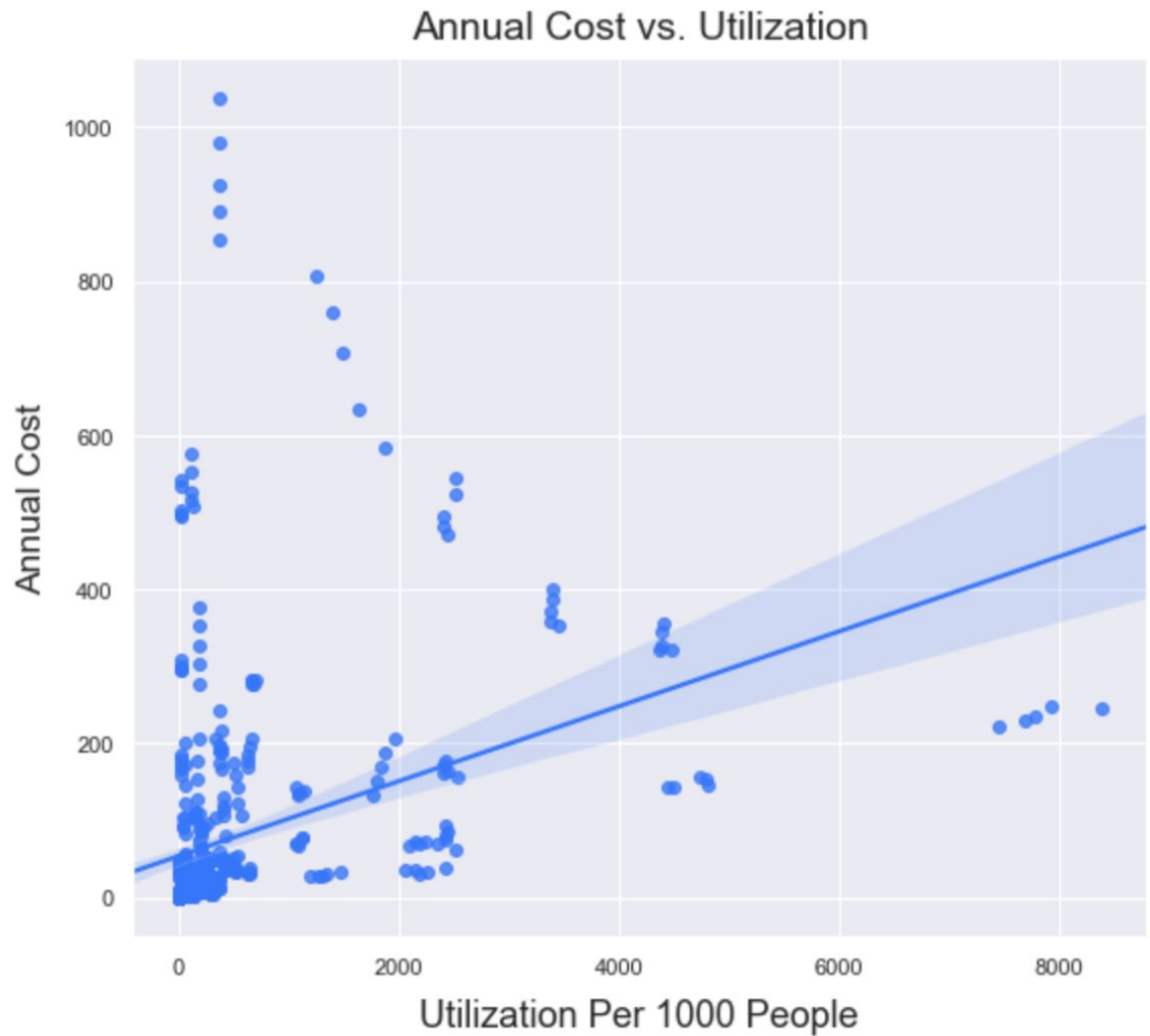
- **Treatments** include: hospice care, radiology, anesthesia, etc.
- Most patients will have multiple treatments for single visit

Description of Annual Cost



Count	470
Mean	119.4
Standard deviation	278.5
Minimum	0.000016
25th Percentile	1.4
50th Percentile	15.7
75th Percentile	89.2
Maximum	1898

Annual Cost vs. Utilization



Model

- Our main predictors are the type of treatment and the rarity of that treatment
- Our Ridge model predicted within \$31 the cost of a treatment

Conclusions

- Given a treatment that someone on an employee-sponsored healthcare plan has received, our model will predict the annual cost that a person needs to pay in addition to their standard contributions.
- Generally higher costs for more common procedures or visits
- Outpatient visits will significantly add to the cost

Resources

Github Repository

https://github.com/gregfeliu/Healthcare_Cost_Predictions/blob/master/README.md

Health Cost Institute

<https://healthcostinstitute.org/data>

https://healthcostinstitute.org/images/pdfs/HCCI_2018_Health_Care_Cost_and_Utilization_Report.pdf

CNBC

<https://www.cnbc.com/2017/06/23/heres-how-much-the-average-american-spends-on-health-care.html>