



# Health Management Organization

Group 4

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BUSINESS  
OVERVIEW



OBJECTIVE



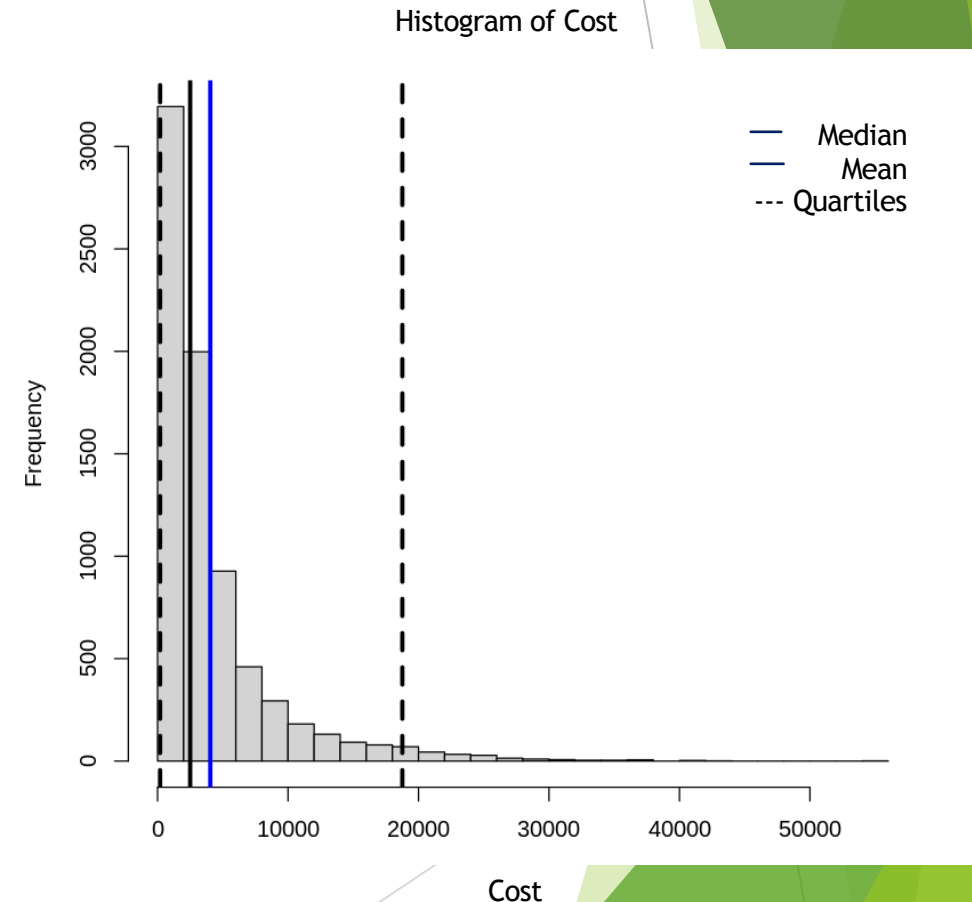
FACTORS  
AFFECTING COST



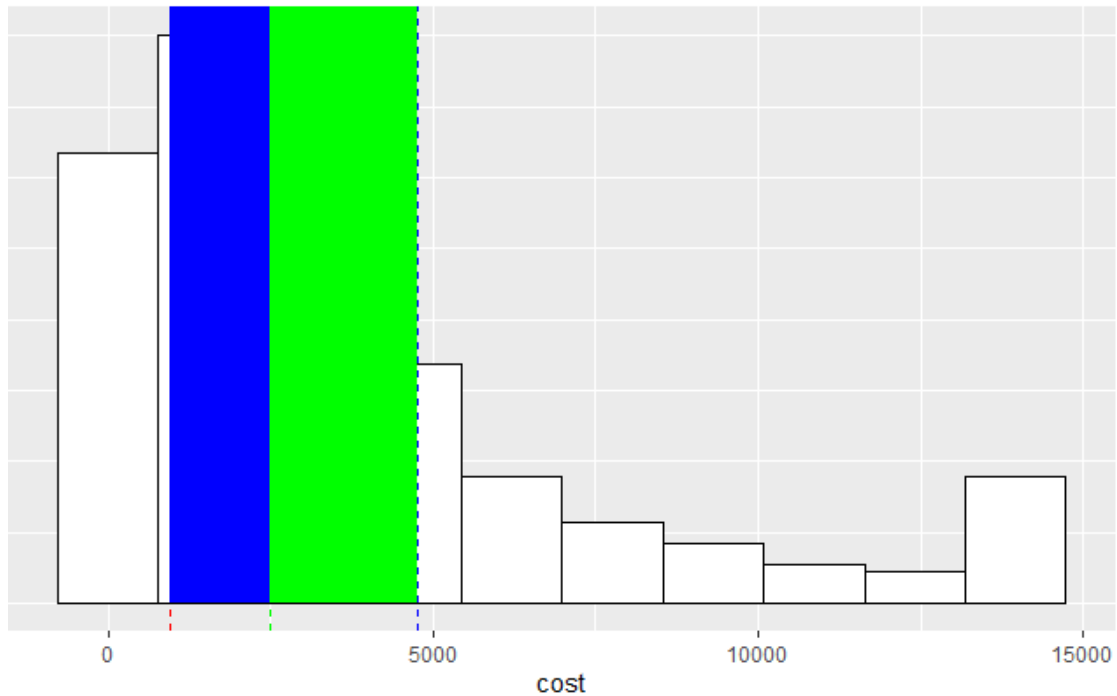
ACTIONABLE  
INSIGHTS

# Business Overview

- ▶ Healthcare Cost Data
- ▶ 7 Primary locations in the Northeastern region of the USA
- ▶ 14 variables, 7582 rows across:
  - ▶ Demographics
  - ▶ Health Descriptors
- ▶ Cost as the Primary dependent variable
- ▶ No time-series data available.
- ▶ Median to classify the cost as expensive or inexpensive



# Objective



- ▶ Predict people spending more money on healthcare next year.
- ▶ Provide actionable insights to the HMO on how to lower their total healthcare costs

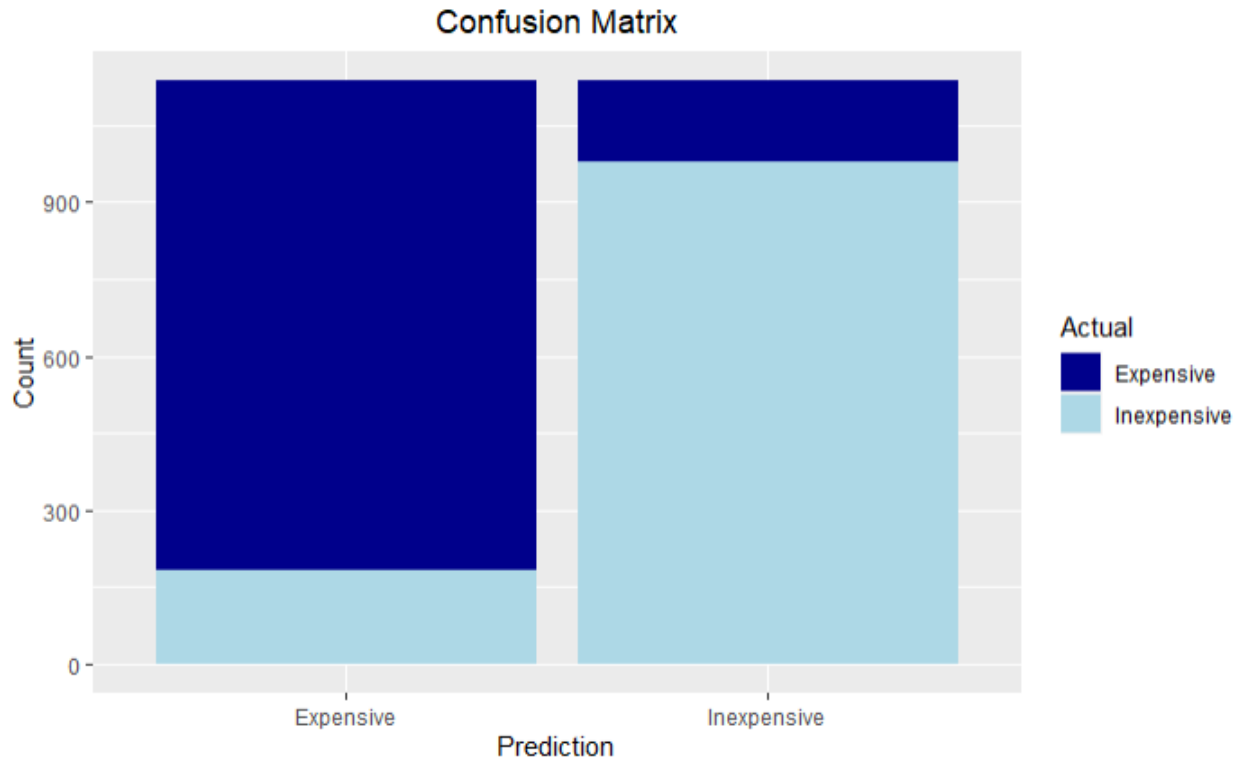
# Factors affecting cost

Predict people spending more money on healthcare next year.

- ▶ Most effective model:
  - ▶ Supervised learning: 70/30
- ▶ Significant factors with 95% confidence and 5% error probability
  - ▶ Age
  - ▶ BMI
  - ▶ Children
  - ▶ Smoker
  - ▶ Exercise
  - ▶ HyperTension
- ▶ People who are more likely to spend more money on healthcare next year:
  - ▶ Older adults
  - ▶ Obese
  - ▶ Smoker(s) young adults
  - ▶ Physically non-active young adults (none or less exercise)
  - ▶ Adults with children
  - ▶ Assumption: Dependent Children
  - ▶ Adults with Hypertension

# Factors affecting cost

Predict people spending more money on healthcare next year.



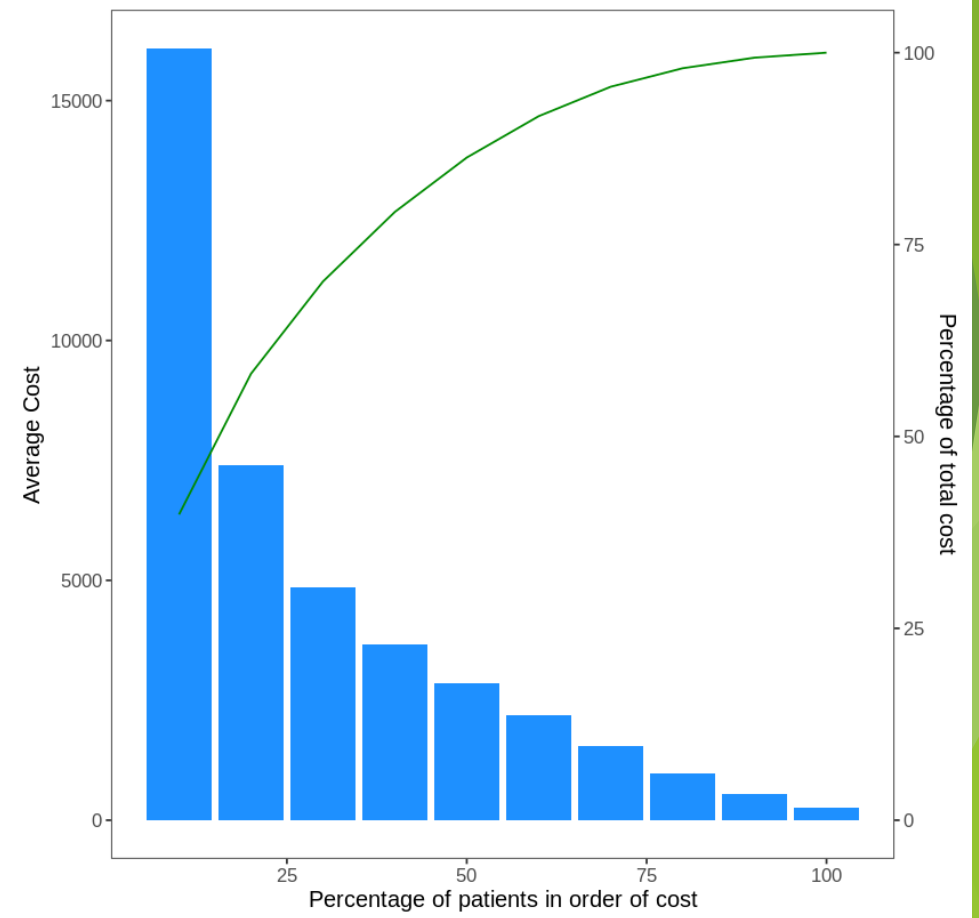
❖ **SVM Model: 85% accuracy**

❖ 85% of the cost changes can be explained by the variables explained in this model.

# Actionable Insights

## Key Inferences

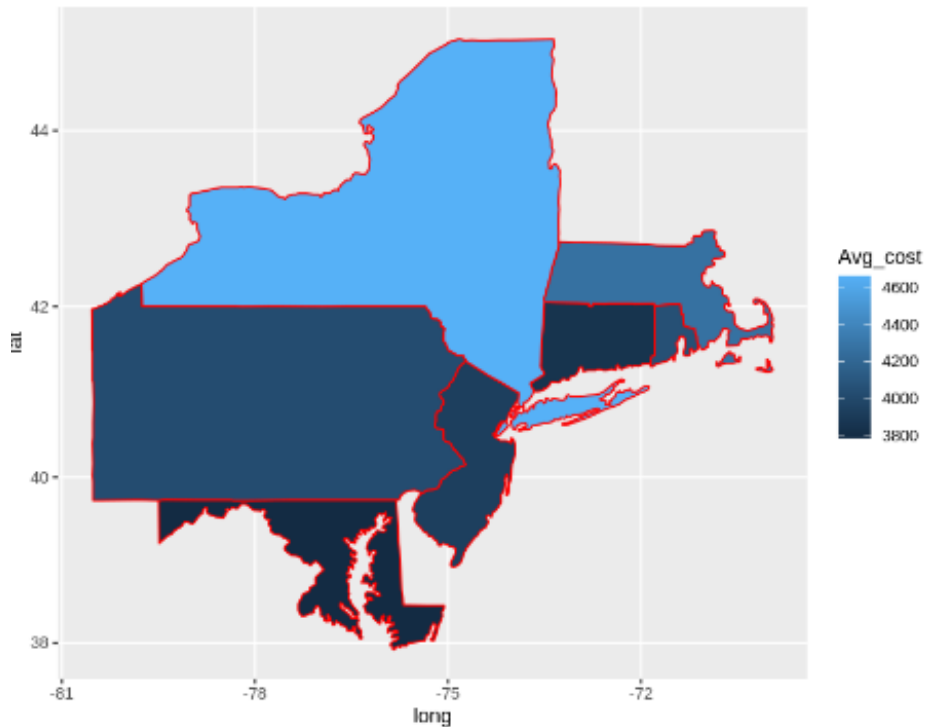
- ▶ 10% of the top-paying patients contribute approximately 40% of the overall cost.
- ▶ 40% of the top-paying patients contribute to approximately 80% of the overall cost.
- ▶ Top 20% patients:
  - ▶ 84% are above 40 years of age
  - ▶ 90% are obese or overweight





# Actionable Insights

Short-term

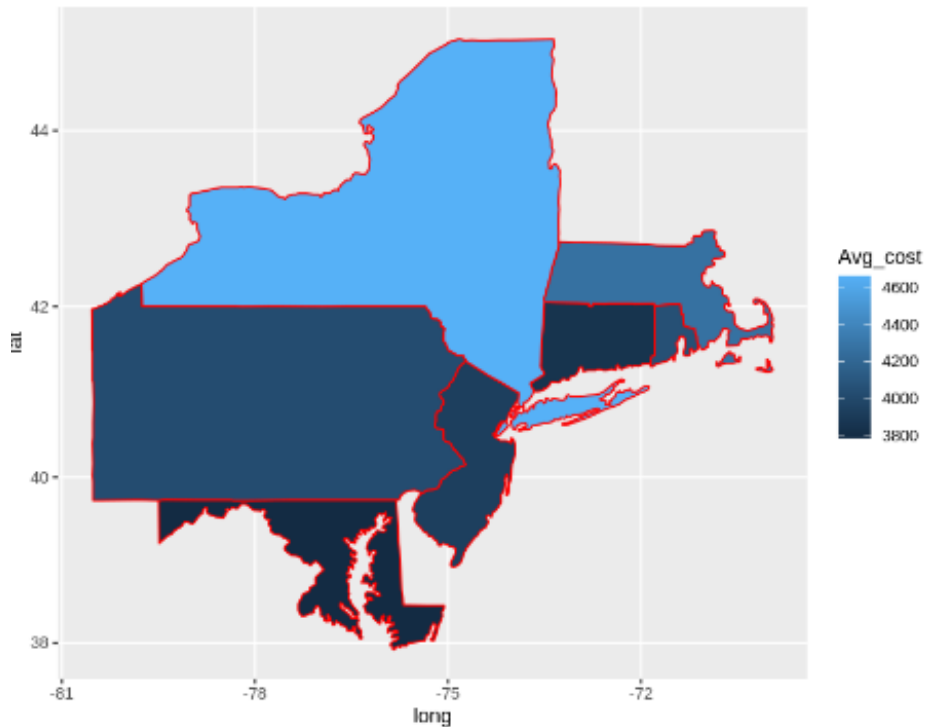


- ▶ Target audience:
  1. Obese and Old Adults
  2. Obese Adults
- ▶ Provide add-on external organization services to reduce cost deductibles.
- ▶ Focus on areas with High Average costs to offer these collaborative health services.
- ▶ Includes:
  1. Dietician
  2. Wellness Groups/Support Groups
  3. Exercise Mentors/ Trainers



# Actionable Insights

Long-term



- ▶ Target audience:
  1. Smoker Young Adult
  2. No Exercise Young Adult
  3. Low Yearly Physical and Adult
- ▶ Offer cost deductible on “Healthy Program” enrollment
- ▶ Target locations remain high cost areas
- ▶ Includes:
  1. Partner Gyms
  2. Partner Counselors
  3. Partner Rehab Centers



Questions