



Reducing Premature Deaths in the US

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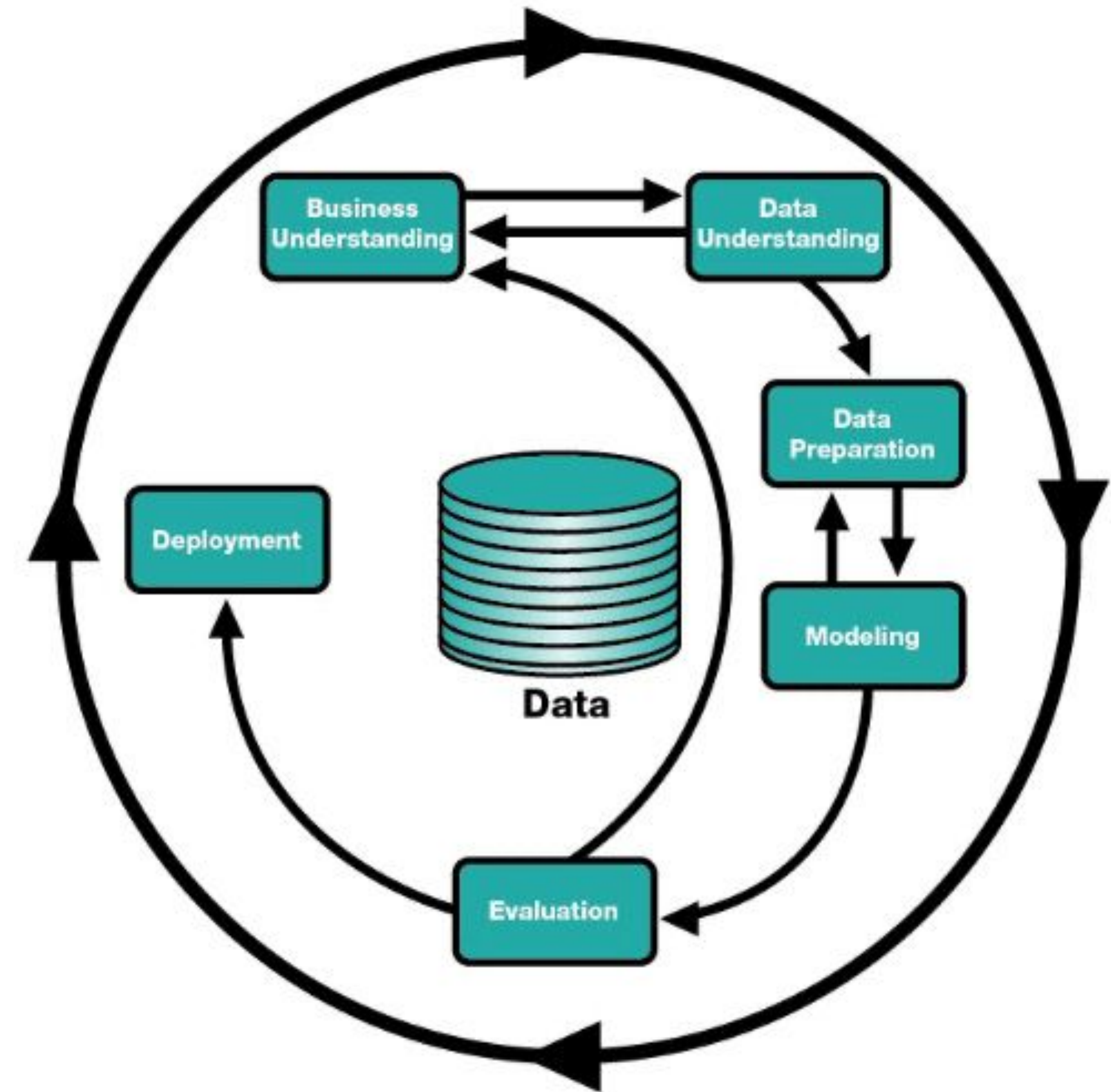
Motivation

We are consultants hired by US-Health and Human Services to identify the reasons of High Premature deaths in some of the counties using 'County Health Rankings and Roadmaps' data collected by Robert Wood Johnson Foundation and the University of Wisconsin.

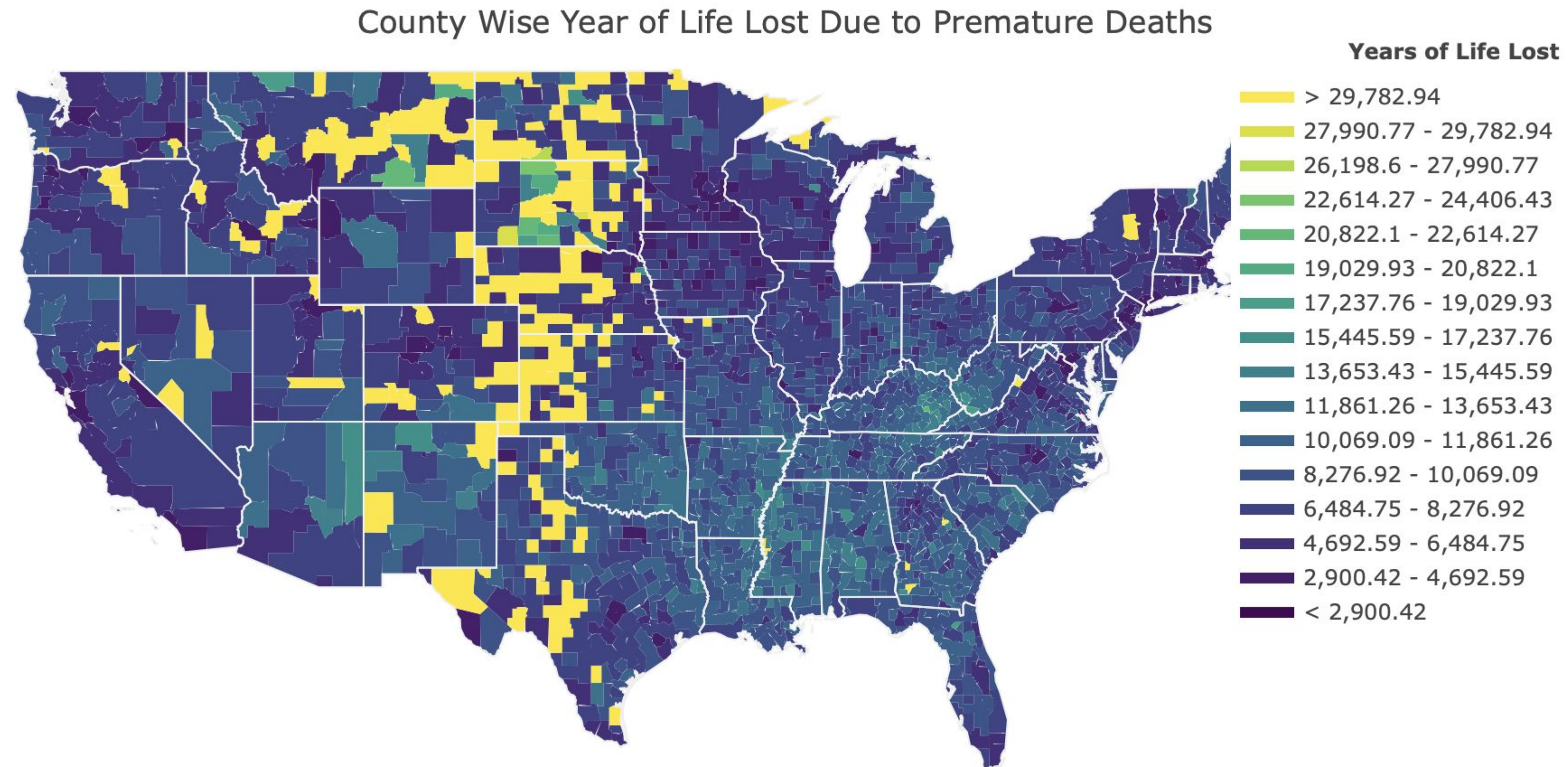


Methodology

1. Business understanding
2. Data understanding
3. Data preparation
4. Modelling
5. Evaluation
6. Recommendation



Current Situation

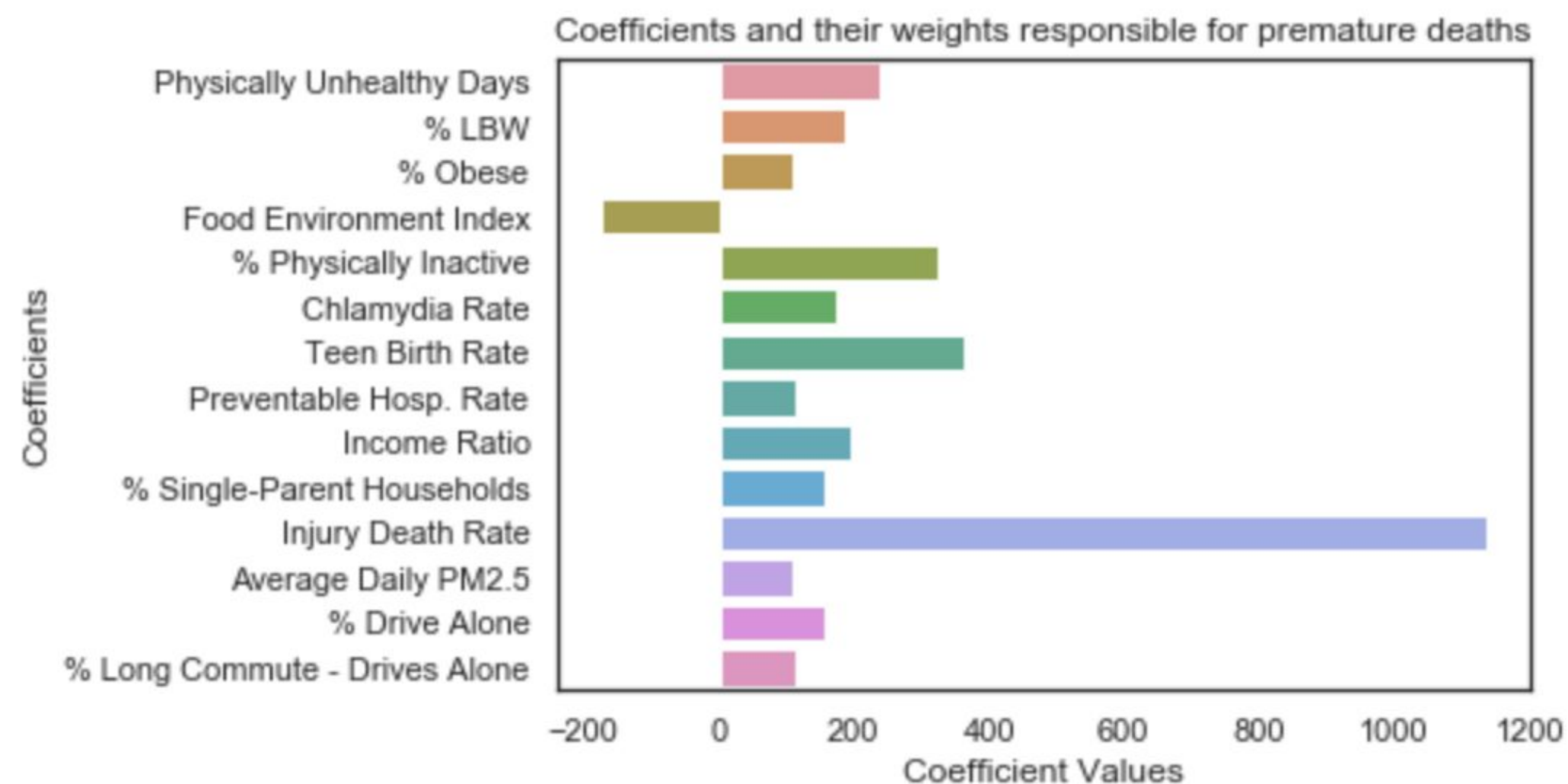


States of Montana, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma and Texas have high years of life lost.

Factors Responsible for Premature Deaths in the US

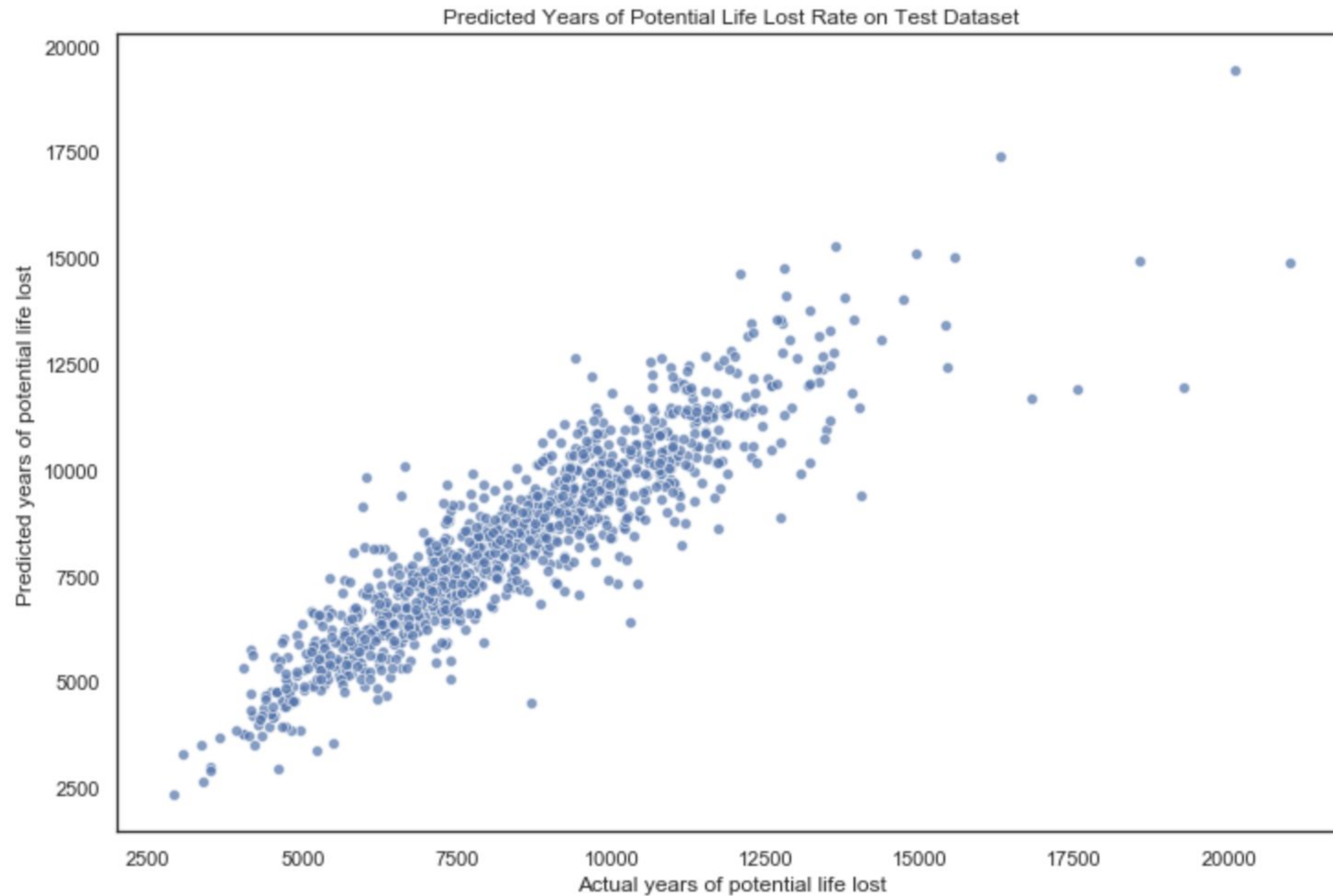
1. Average number of reported physically unhealthy days per month
 2. Percentage of births with low birth weight (<2500g)
 3. Percentage of adults that report BMI ≥ 30
 4. Indicator of access to healthy foods - 0 is worst, 10 is best
 5. Percentage of adults that report no leisure-time physical activity
 6. Chlamydia cases per 100,000 population
 7. Births per 1,000 females ages 15-19
 8. Discharges for Ambulatory Care Sensitive Conditions per 100,000 Medicare Enrollees
 9. Ratio of household income at the 80th percentile to income at the 20th percentile
 10. Number of children that live in single-parent households
 11. Injury mortality rate per 100,000
 12. Average daily amount of fine particulate matter in micrograms per cubic meter
 13. Percentage of workers who drive alone to work
 14. Among workers who commute in their car alone, the percentage that commute more than 30 minutes
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Top-3 Factors Responsible for Premature Deaths in the US



1. Injury mortality rate per 100,000
1. Births per 1,000 females ages 15-19
1. Average number of reported physically unhealthy days per month

Model Performance



- **Model Chosen:** Lasso Regression with 5 folds cross validation
- **Model Performance (Training Data):** R-squared value - 0.85
- **Model Performance (Test Data):** R-squared value - 0.822

Recommendations



Government should focus on reducing injury mortality rate per 100,000.

Key to achieving this is to devise policies that result in lower accidents



Government should focus on reducing the teen birth rate as the females in this age might not be able to provide proper care to the child that results in premature death.



Create a social environment that stimulates physical activity.

Thank you!

Q&A