

Analyzing Health & Insurance Charges across Demographics in the USA

Prepared for: Stakeholders

Prepared by: Idamin Rahaman

### **Executive Summary**

This report explores insurance charges across individuals in the USA, based on age, BMI, region, and lifestyle factors. The dataset (n=1,338) highlights key cost drivers such as age progression, obesity, and smoking habits. The primary objective is to identify opportunities to balance or reduce per-head insurance charges.

#### ■ Age Group Analysis

Seniors face the highest average charges, nearly 50% more than Young Adults. Insurance expenditure grows steadily with age, reflecting increasing health risks. BMI also rises with age, with Seniors averaging 32.2 compared to 29.8 for Young Adults.

#### **BMI** Insights

The median BMI across the dataset is 30.4, placing most individuals in the Obese category. Charges increase sharply with BMI, with obese individuals paying the highest premiums. Underweight individuals incur the lowest charges.

#### **♥■** Impact of Smoking

Smoking substantially increases insurance charges. Seniors and overweight individuals have a smoker-to-non-smoker ratio of 4:10. Early Middle Age underweight individuals have the highest smoker ratio (>60%). Charges drop by 33% to 56% when individuals stop smoking, making smoking cessation the single largest lever for cost reduction.

## ■ Key Recommendations

- Introduce targeted health programs for Seniors and obese populations.
- Promote weight management initiatives across all age groups.
- Implement robust smoking cessation campaigns, with clear evidence of 30–56% charge reductions.
- Focus on preventive care to mitigate long-term costs.

# ■ Conclusions

The analysis reveals that age, BMI, and smoking status are the strongest predictors of insurance charges. Targeted health programs, lifestyle interventions, and preventive care can significantly reduce per-head costs and promote long-term sustainability in insurance management.