INSURANCE PRICE PREDICTION ANALYSIS: POWER BI DASHBOARD REPORT

DASHBOARD

Prepared by: Dibosh Baruah

Problem Statement

- **Objective**: The objective of this project is to analyze a dataset related to insurance pricing in order to create an insightful Power BI dashboard. The dashboard will visualize the key trends and factors influencing insurance charges, based on demographic, lifestyle, and medical data, with a goal to predict and explain the insurance pricing based on the given attributes.

Dataset Overview

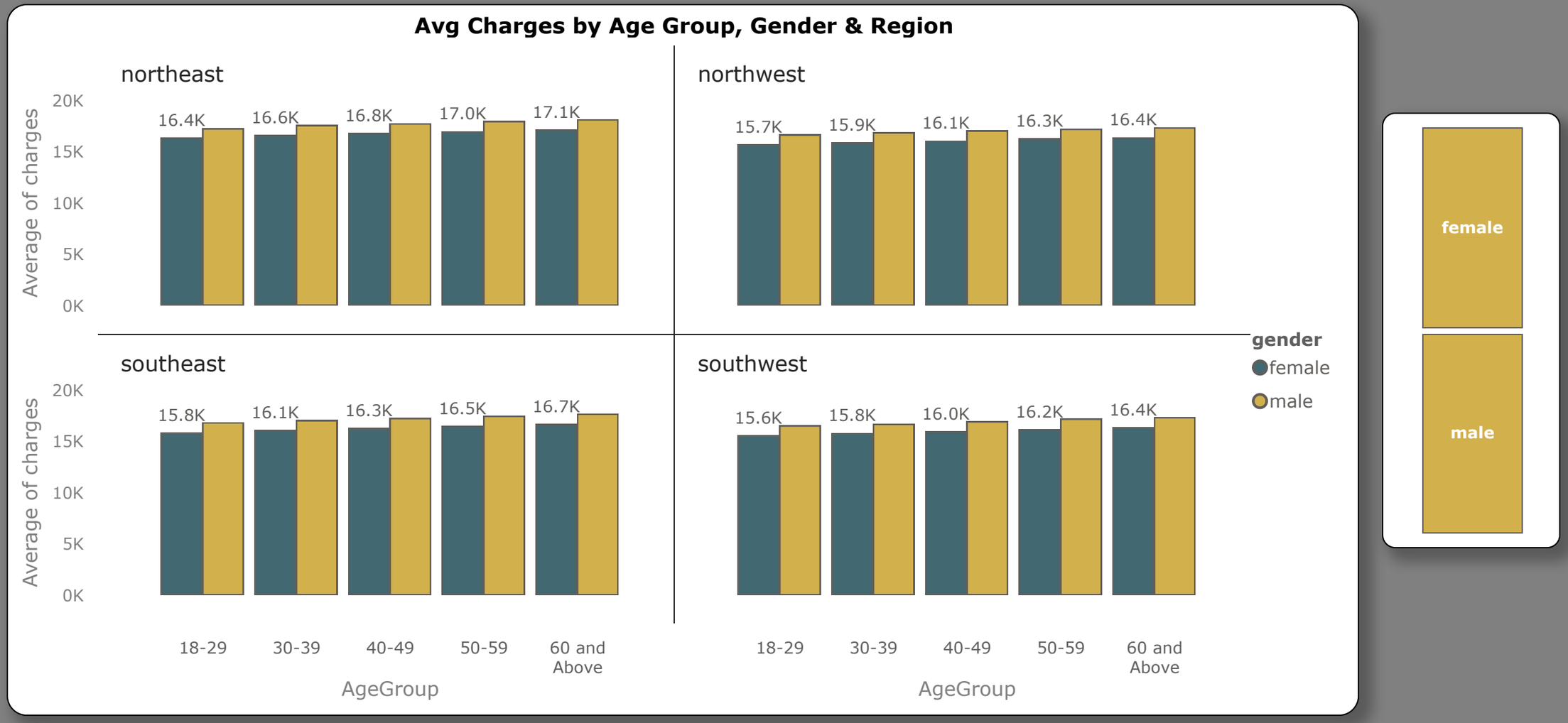
- **Dataset Description**: The dataset includes information related to individuals, including:
- **Demographic Information**: Age, gender, and region of residence.
- **Lifestyle and Health Information**: BMI, smoking habits, exercise frequency, medical history, and family medical history.
- **Insurance Information**: Number of children, occupation type (e.g., blue collar, white collar), and coverage level (e.g., standard, premium).
- **Insurance Charges**: The insurance charges each individual pays based on their attributes.

Tasks and Visualizations

Visualize Insurance Charges Distribution

VISUALIZE INSURANCE CHARGES DISTRIBUTION

DASHBOARD



ANALYZE HEALTH AND LIFESTYLE IMPACT

DASHBOARD

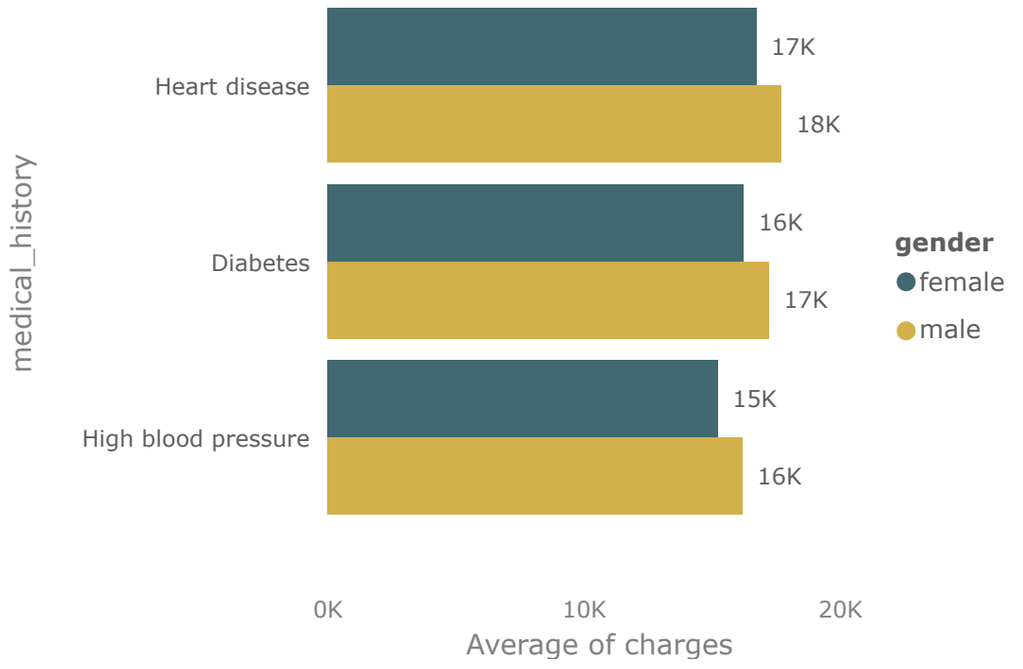
coverage_level: All

AgeGroup: All

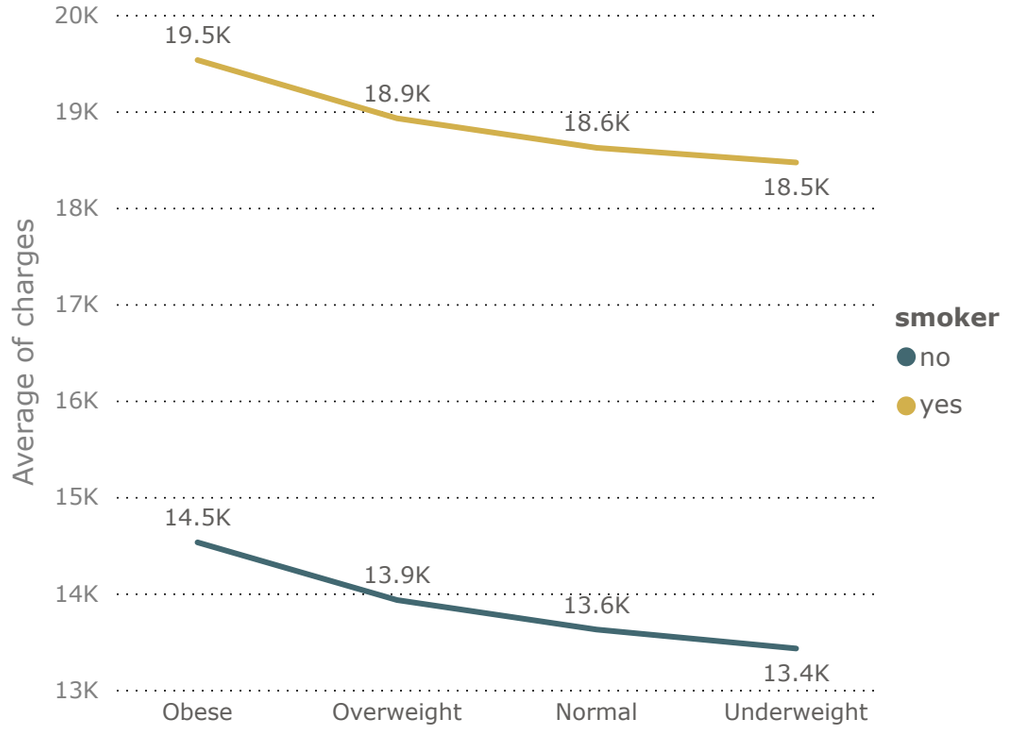
BMI_Category: All

female | male

Charges by Medical History & Gender



Average of charges by BMI_Category and smoker



ROLE OF OCCUPATION AND COVERAGE LEVEL

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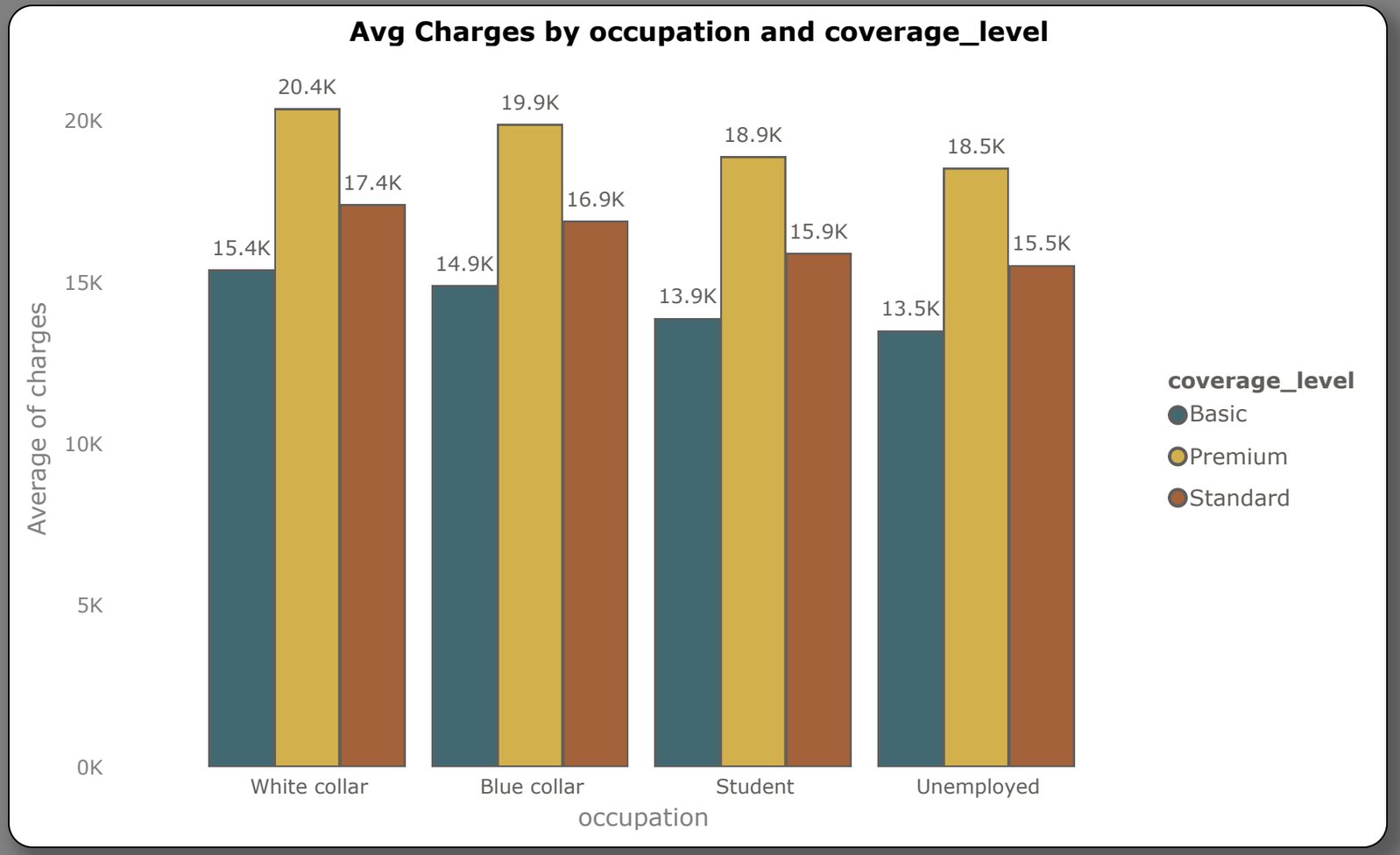


AgeGroup

- 18-29
- 30-39
- 40-49
- 50-59
- 60 and Above

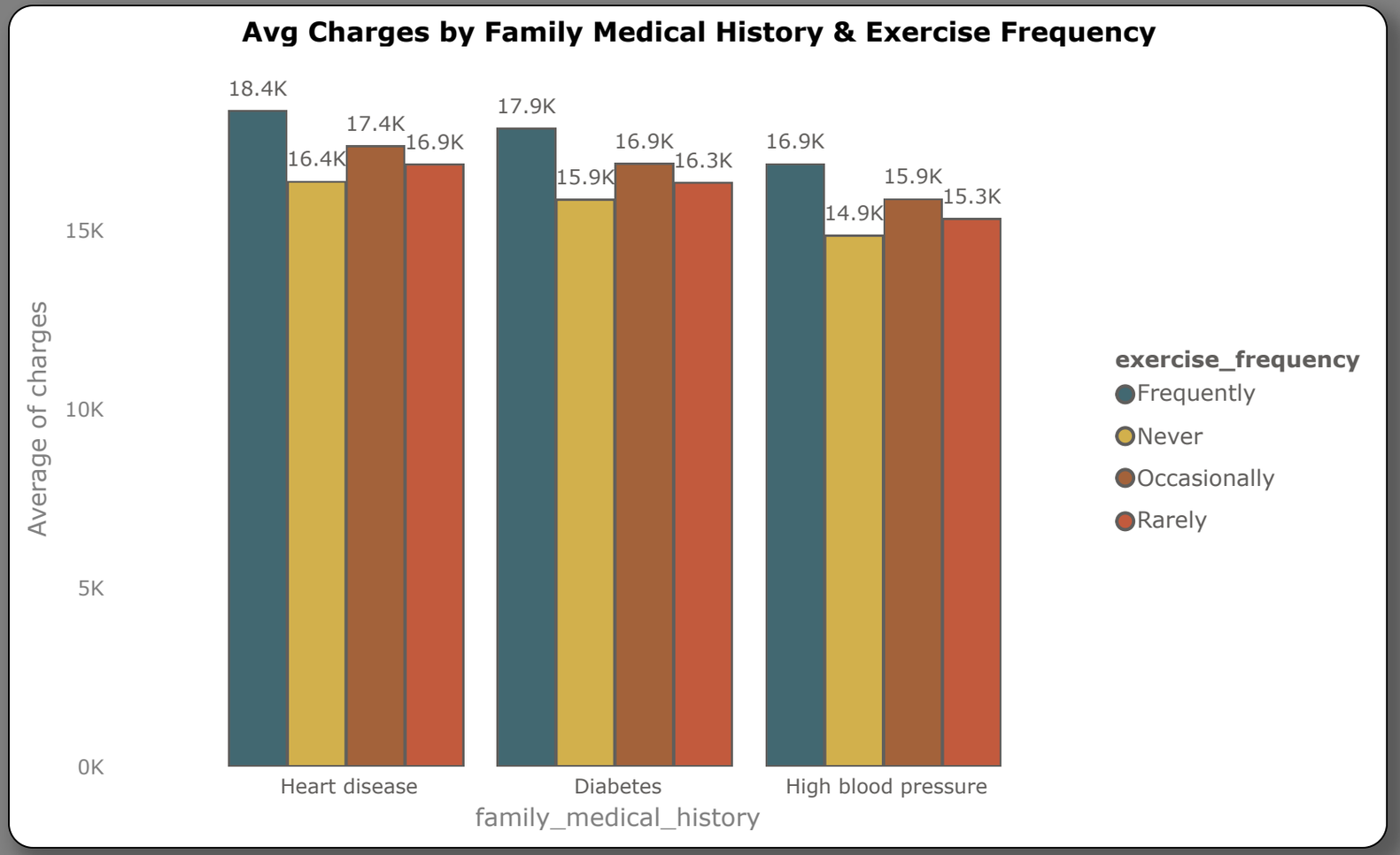
female | male

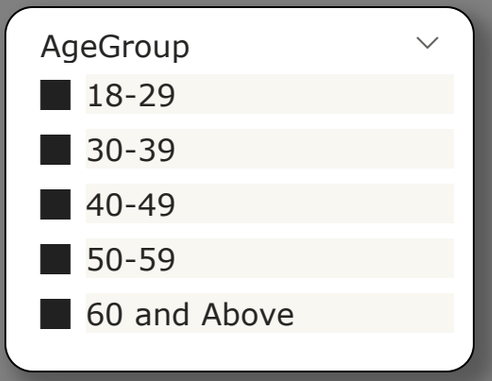
coverage_level

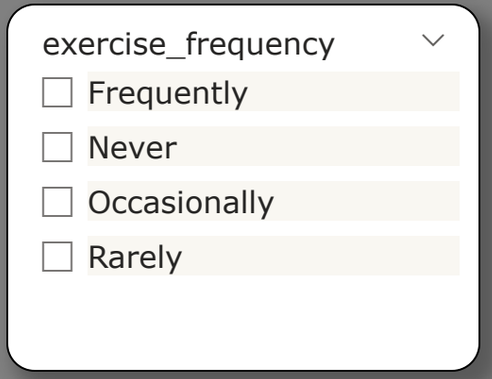
- [ ] Basic
- [ ] Premium
- [ ] Standard

INFLUENCE OF FAMILY MEDICAL HISTORY AND EXERCISE FREQUENCY

DASHBOARD







KPI1 | KPI2 | KPI3 | KPI4 | DASHBOARD | SUMMARY

INSURANCE PRICE PREDICTION DASHBOARD

Avg BMI

34.00

0.00 68.00

Average Charges

16.74K

0.00K 33.47K

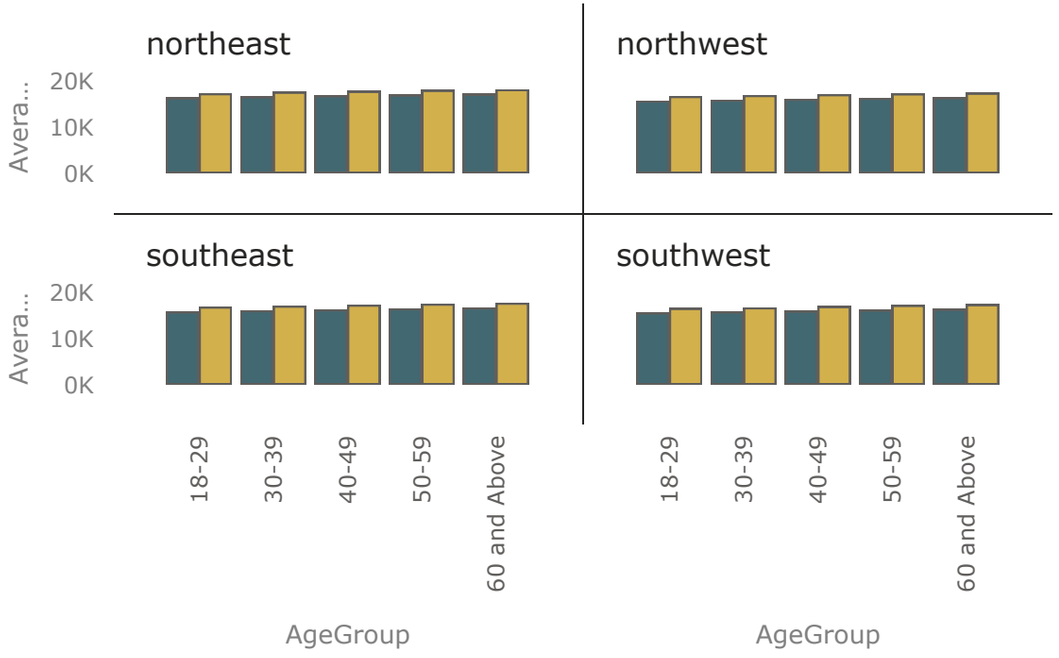
AgeGroup

All

female male

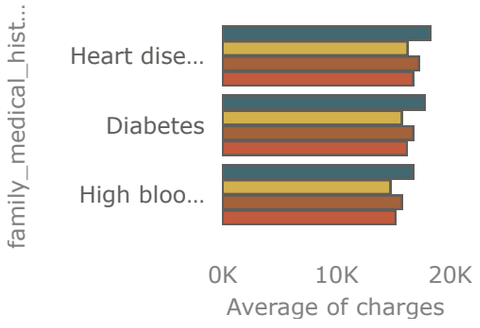
Avg charges by AgeGroup, gender and region

gender female male



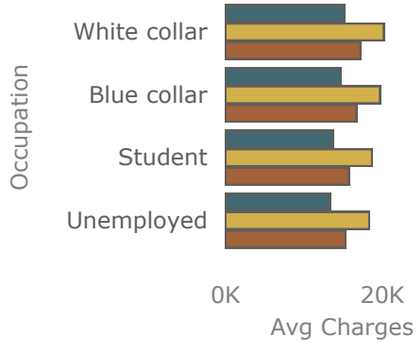
Avg charges by family medical history & exercise frequency

exerci... Frequently Never

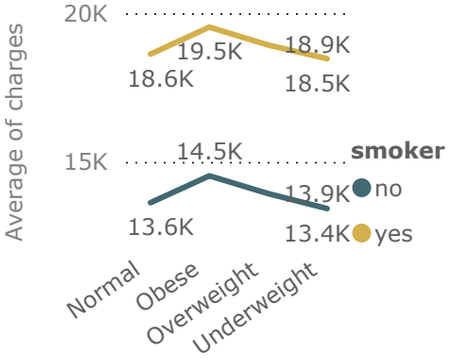


Avg charges by Occupation & Coverage

Cover... Basic Premium Standard

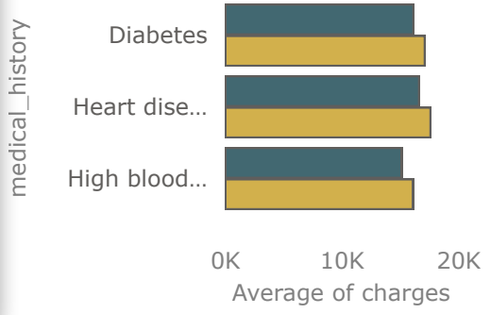


Average of charges by BMI_Category and smoker



Charges by Medical History & Gender

gender female male



DASHBOARD

Key Insights:

1. **Age, BMI, and Smoking Habits** are key drivers of higher insurance charges. Older individuals, those with high BMI, and smokers face much higher costs.
2. **Medical history** — particularly chronic conditions like **diabetes** and **high blood pressure** — leads to higher premiums due to the long-term risks and associated healthcare needs.
3. **Occupation** plays a minor role, but blue-collar workers tend to face higher charges, possibly due to the physical demands of their jobs.
4. **Coverage Level** is a major factor, with premium plans incurring higher costs, as they offer better protection but come with increased charges.
5. **Lifestyle factors** such as **exercise habits** and **family medical history** significantly influence insurance charges. Regular exercise is associated with lower premiums, while a family history of chronic conditions increases costs.

By targeting specific high-risk groups (e.g., smokers, individuals with high BMI), insurance companies could tailor policies and interventions to manage costs more effectively

Key Factors Increasing Insurance Charges: