

# HEALTHVUE

Something about healthvue

Navdha Bansal  
Nishita Kannan  
Vasana Srinivasan

# Questions We Answered

Relationships between:

1. Diseases and specific demographic groups
2. Patient's medical condition with their admission type and their duration of stay
3. Duration of the stay, medication, insurance and billing amount
4. Medical conditions and seasons
5. Medical conditions and associated medications and duration of stay
6. Blood type and disease
7. Disease and billing amount
8. Medication usage over time and season

# What was done in Phase 2

Visualizations 3 and 5

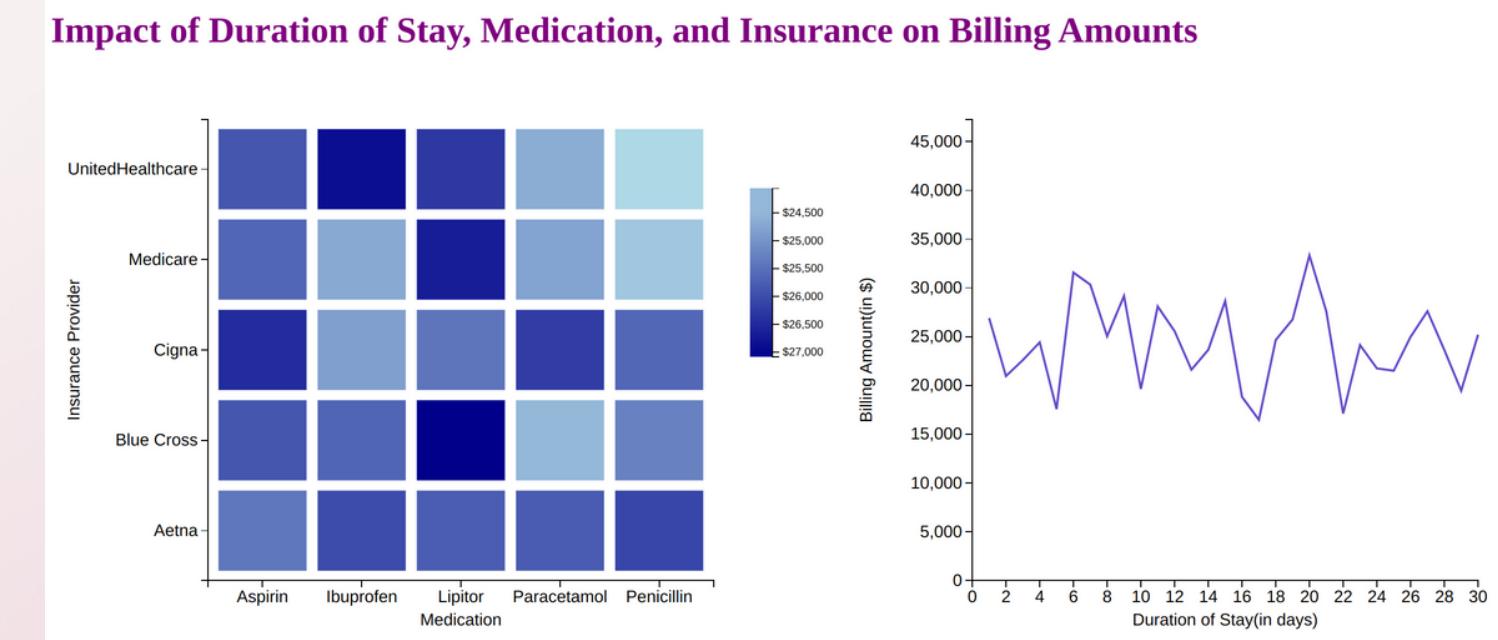
# Visualization 3

Relationship between the Duration of the stay, medication, insurance and billing amount

## Heatmap and Line Graph

Why did we choose this graph?

- Heatmap effectively visualises the relationship between two categorical and one quantitative variables.
- Line graph allows users to view the relationship between two quantitative variables.



Choose between:

- All stats
- Best insurance provider

Show Best insurance provider  
Show all insurance providers

Return Home

Tooltip : Click on a heatmap rectangle to display corresponding line graph

# Visualization 5

Relationship between Medical conditions, associated medications and duration of stay

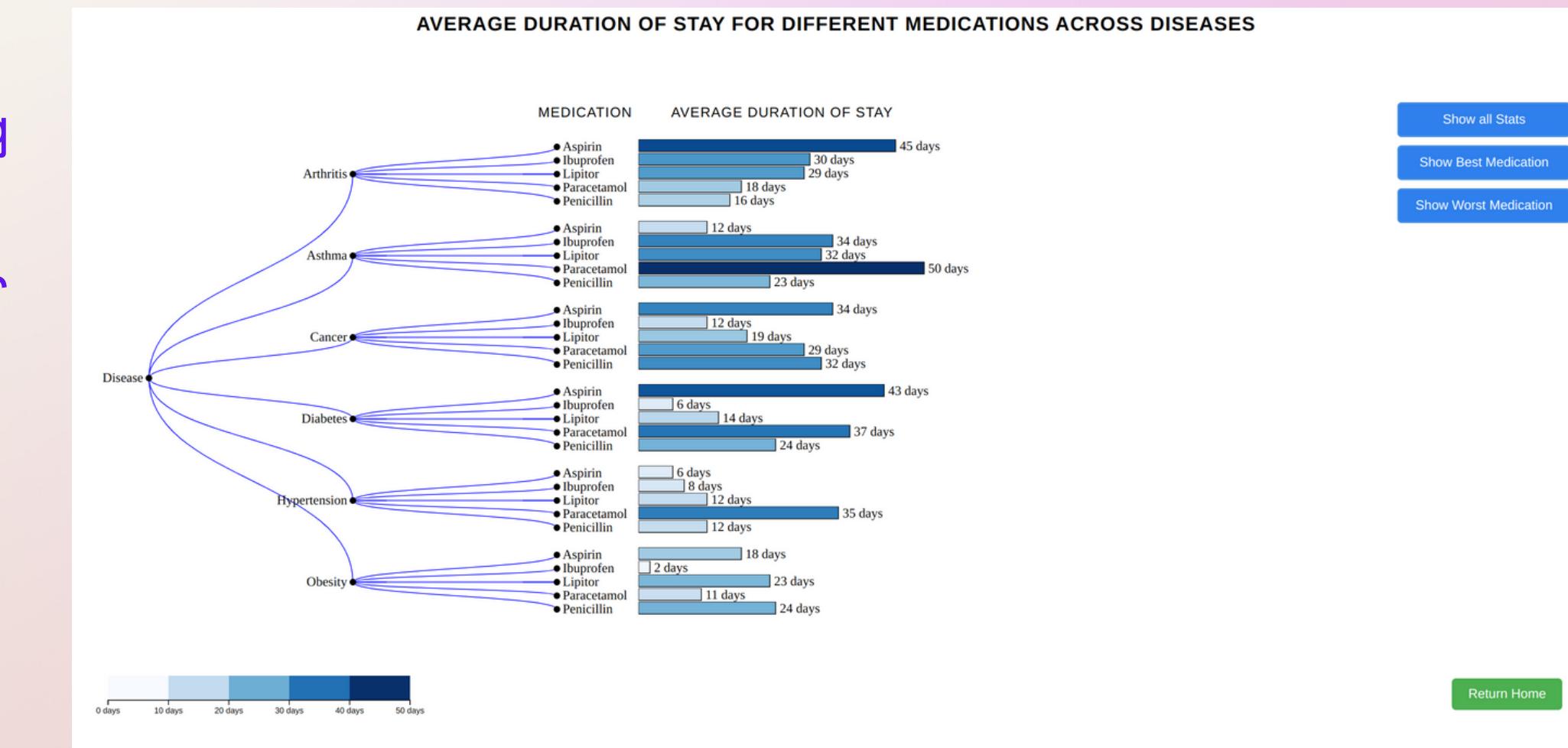
## Dendrogram and Horizontal Barplot

Why did we choose this graph?

- Dendrogram effectively represents hierarchical and clustered data structures in a tree-like branching diagram.
- Horizontal bar plots are useful for visualizing and comparing the magnitudes or values of different categories

Choose between:

- All stats
- Best Medication
- Worst Medication and Toolt



# Visualizations in Phase 3

Statistical techniques play a crucial role in data analysis

The other 6 viz are:

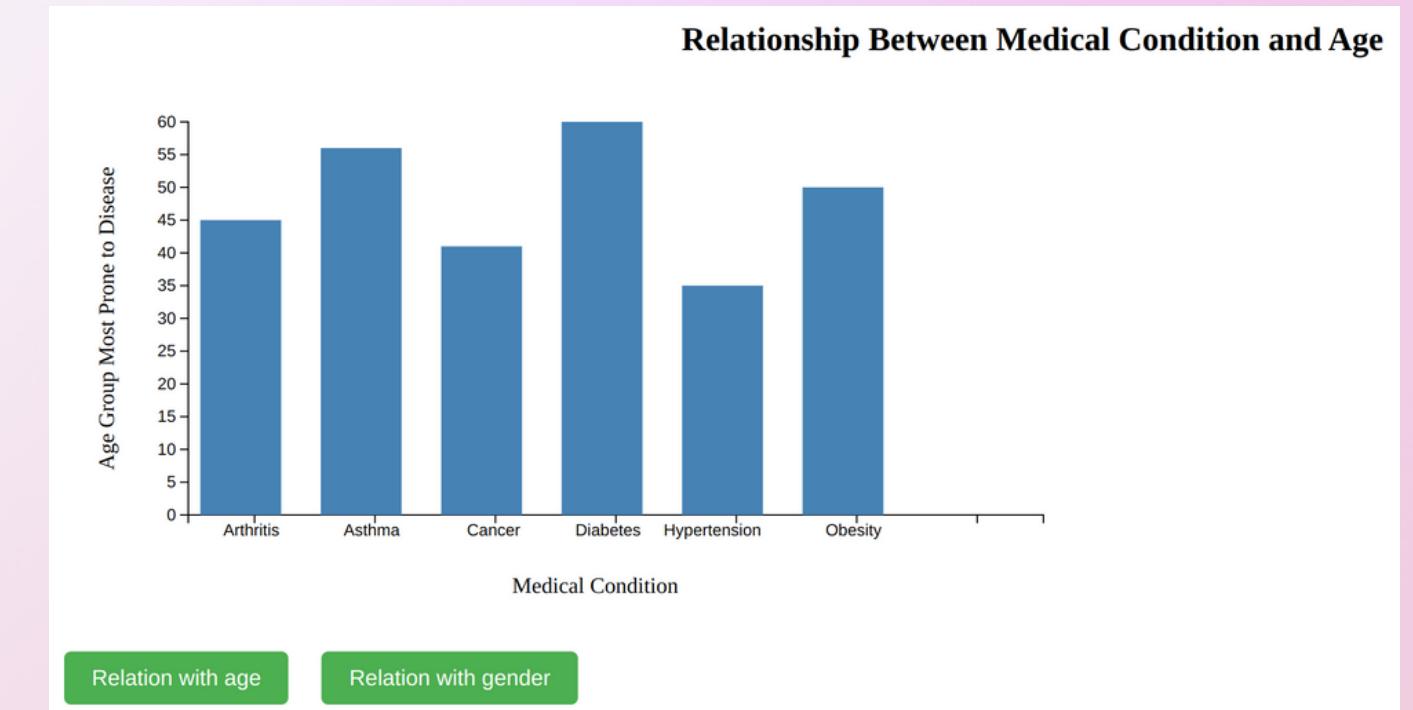
# 01 - Data Visualization

Relationship between medical conditions and age and gender

## Bar Graphs

Why did we choose this graph?

- Bar graphs are effective for visualizing and comparing values or frequencies across different categories

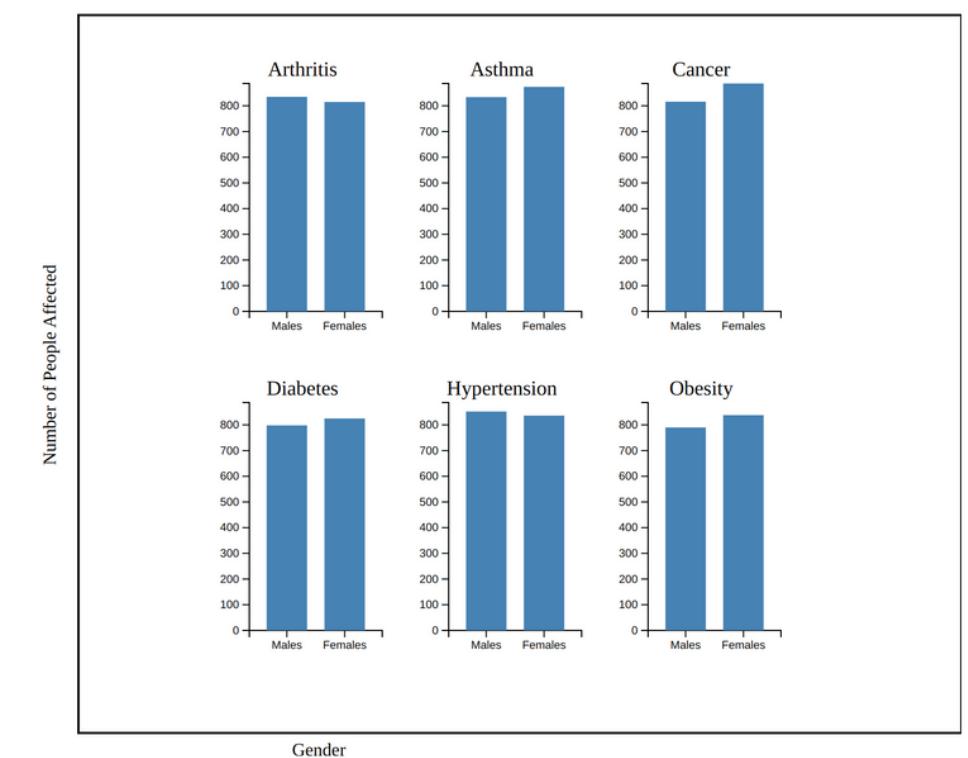


Choose between-

- Relation between age
- Relation between gender

Toolips

**Relationship Between Medical Condition and Gender**



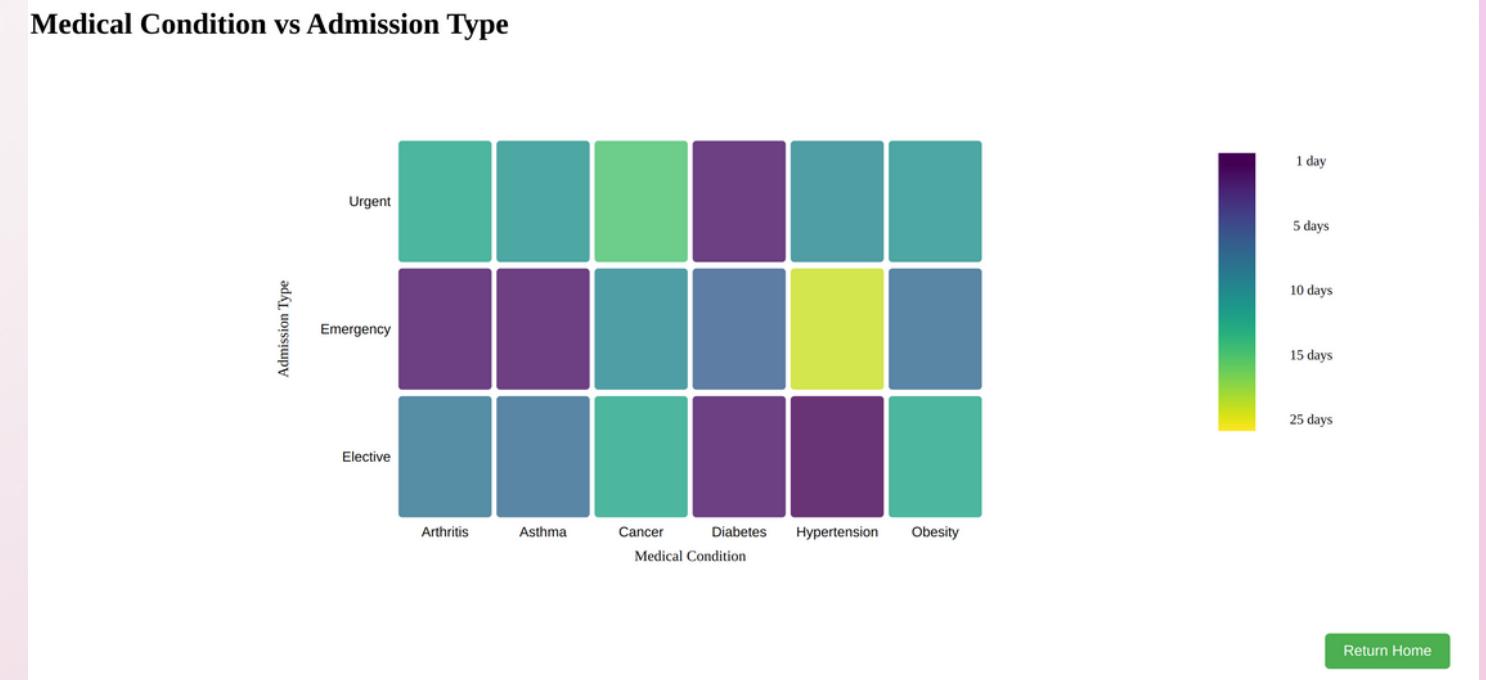
# 02 - Data Visualization

Relationship between duration of stay, admission type and medical conditions

## Heatmap

Why did we choose this graph?

- Heatmaps are used to visualize the relationship or correlation between two variables, typically using color intensity or shading to represent the magnitude of values.



## Tooltips

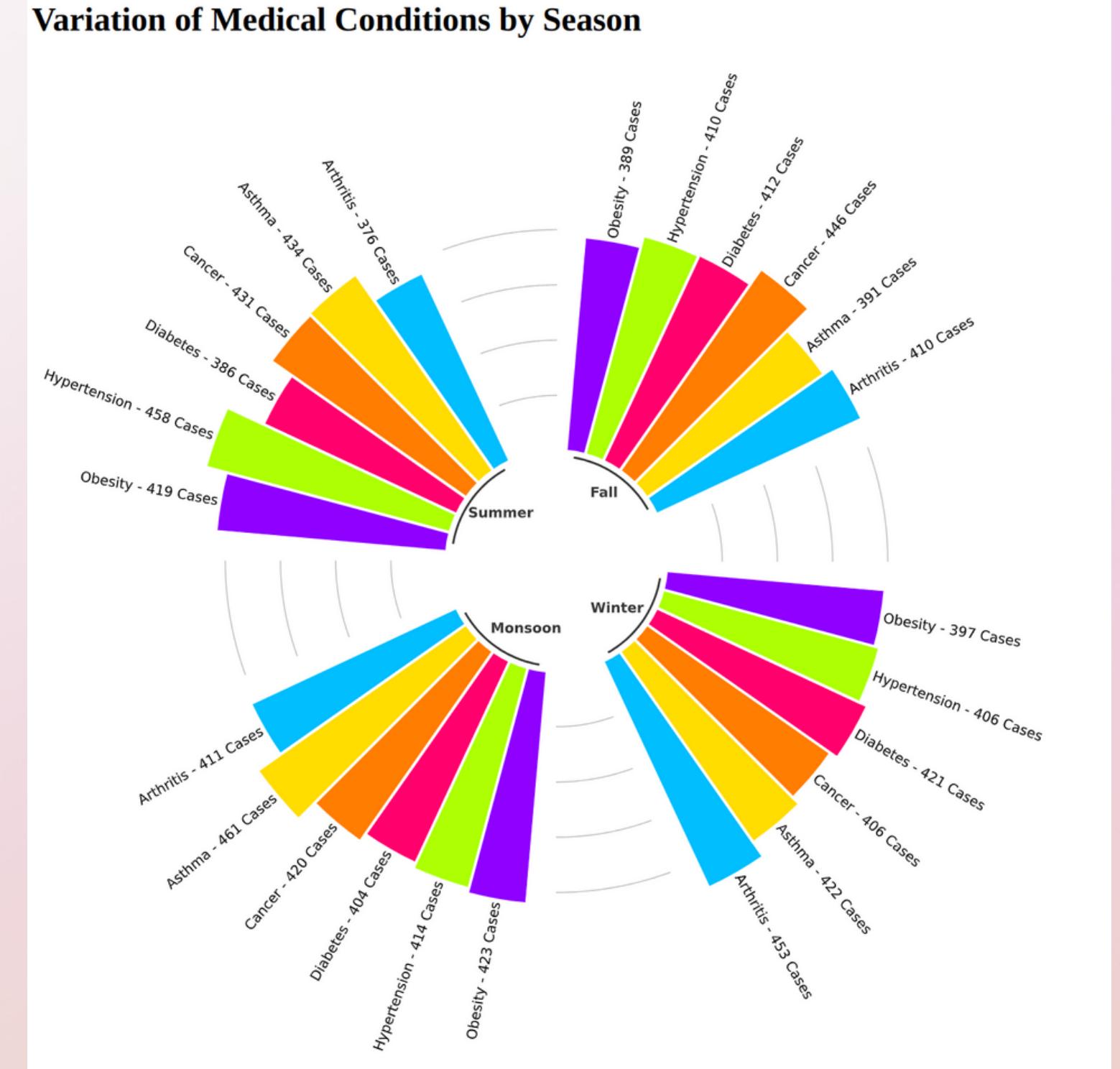
# 04 - Data Visualization

## Relationship between seasons and medical conditions

### Radial barplot

Why did we choose this graph?

- A radial bar plot is useful for visualizing cyclical or periodic data over a repeated interval, such as monthly, quarterly, or seasonal patterns.



# 06 - Data Visualization

## Relationship between medical condition and blood type

### Treemap

Why did we choose this graph?

- A treemap is an effective way to visualize hierarchical data using nested rectangles, where the area of each rectangle represents a quantitative value or proportion of the whole.

### Tooltips

### Relation Between Blood Type and Medical Condition

Asthma

O+	227 Cases	B+	217 Cases	A-	208 Cases
A+	220 Cases	AB-	210 Cases	AB+	199 Cases
B-	218 Cases	O-	209 Cases		

Cancer

O+	224 Cases	A-	218 Cases	O-	204 Cases
B-	221 Cases	B+	214 Cases	AB-	195 Cases
A+	219 Cases	AB+	208 Cases		

Hypertension

AB-	225 Cases	AB+	211 Cases	O+	209 Cases
A+	213 Cases	O-	211 Cases	B-	196 Cases
A-	212 Cases	B+	211 Cases		

Arthritis

O+	225 Cases	AB+	219 Cases
O-	216 Cases	AB-	204 Cases
B+	202 Cases	A-	202 Cases

Diabetes

B-	221 Cases	B+	207 Cases	A+	197 Cases
AB-	214 Cases	A-	206 Cases	O+	174 Cases
AB+	207 Cases	O-	197 Cases		

Obesity

AB-	227 Cases	AB+	214 Cases
B-	210 Cases	O-	207 Cases
B+	199 Cases	A-	192 Cases
A+	190 Cases		

# 07 - Data Visualization

Relationship between medical condition and billing amount

## Polar Area Chart

Why did we choose this graph?

- A polar area chart is useful for visualizing the relative proportions or parts that make up a whole, using the area of slices or wedges to represent quantitative values.

Toolips

Relation between Disease and Billing Amount



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# 08 - Data Visualization

## Variation of usage of medications over time

### Line Chart

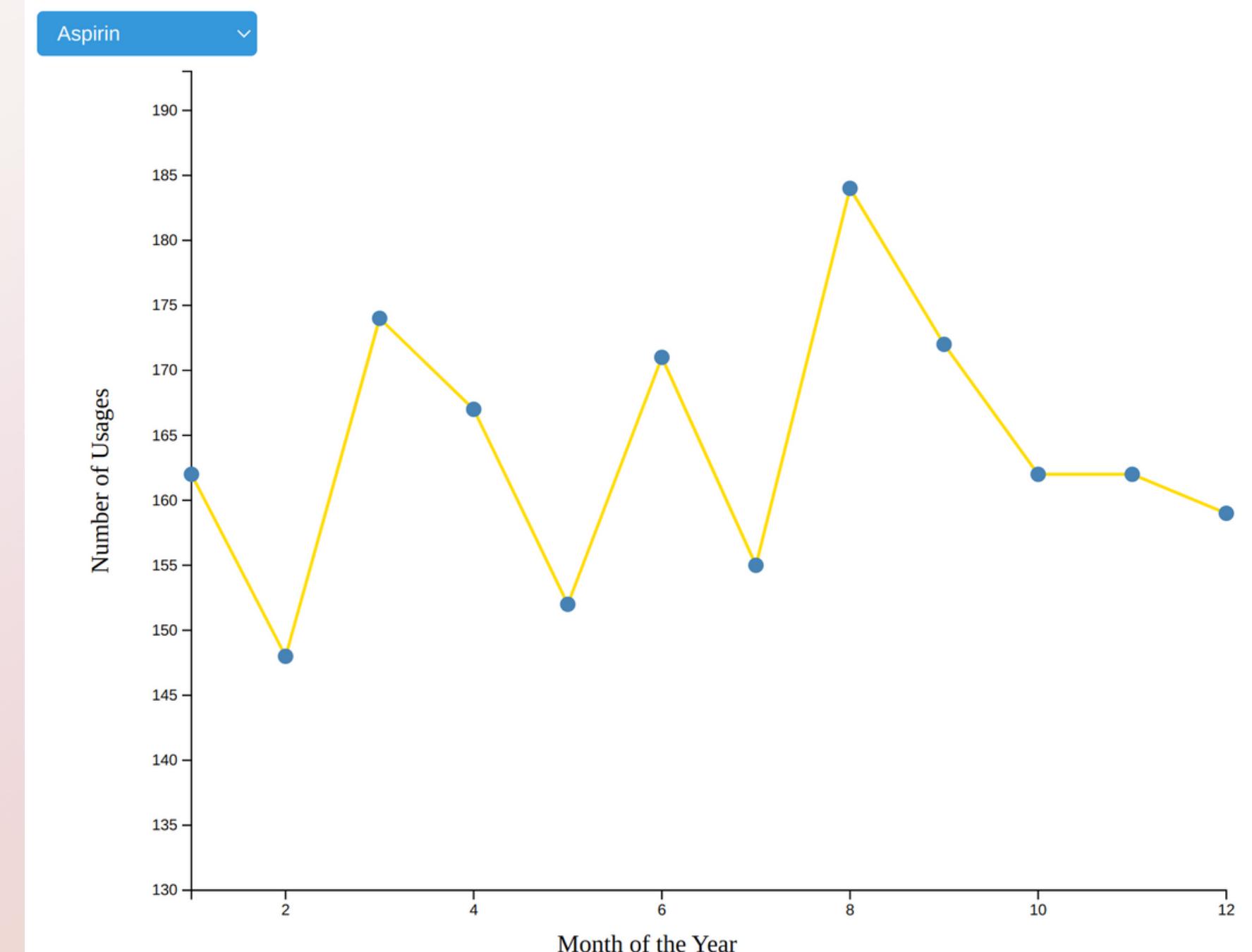
Why did we choose this graph?

- Line graph allows users to view the relationship between two quantitative variables.

Dropdown menu- to select medication whose usage user wants to see over time.

Toolips

### Variation of Usage of Medications over Time



# Tasks that can be performed

*Data  
visualization  
simplifies the  
communication  
of analysis  
findings*

1. Identify demographic groups that may have a higher susceptibility to certain medical condition
2. Investigate the patterns and relationships between a patient's medical condition, their admission type and the duration of stay
3. Analyze how duration of stay, prescribed medication, and insurance provider influence the overall billing amount
4. Explore how the prevalence of medical conditions varies across different seasons

# Tasks that can be performed

*Data  
visualization  
simplifies the  
communication  
of analysis  
findings*

- 5.Examine the hierarchical structure of medical conditions and their associated medications, and evaluate the relative effectiveness of different medications for a given condition
- 6.Investigate the relationship between a patient's blood type and their susceptibility to various diseases.
- 7.Analyze the distribution of healthcare expenditures across different medical conditions to understand which conditions account for a overall billing.
- 8.Study the trends and patterns in medication usage over time

# Users

1. Healthcare Providers (doctors, hospitals, clinics)
2. Healthcare Administrators and Policymakers
3. Pharmaceutical Companies and Researchers
4. Insurance Providers
5. Public Health Organizations and Researchers
6. Patients

# Dataset

*Data science is a combination of quantitative analysis, programming, and narrative*

Sourced and Modified from Kaggle  
json and csv files generated from  
the dataset and used for visualizing

# Limitations

1. Regional Variations
2. Data Dynamism
3. Accessibility Constraints (colorblindness)

# Conclusions

Aids in:

- comprehensive analysis
- valuable starting point
- informed policy decisions

*Data analysis helps in identifying outliers or anomalies in the data*

# Thank You!