Exploring PowerBI

Power BI, developed by Microsoft, is a business analytics tool that enables users to visualize and analyse data, share insights, and make informed decisions. It is part of the Microsoft Power Platform, which also includes Power Apps and Power Automate. Power BI is widely used for its user-friendly interface, robust data connectivity, and powerful analytical capabilities.

1. **Data Transformation and Modelling:** Power BI Desktop provides powerful tools for transforming and shaping data, and it supports data modeling through relationships between tables. Users can create calculated columns, and measures, and use DAX (Data Analysis Expressions) formulas to perform complex calculations.
2. **Visualization:** Power BI offers a rich set of visualization options, including charts, tables, maps, and custom visuals created by the Power BI community. Users can customize the appearance of visuals and create interactive dashboards.
3. **Q&A (Natural Language Query):** Users can ask questions about their data in natural language, and Power BI will generate visualizations based on the data. This feature makes it easy for non-technical users to explore and analyze data.
4. **Security and Collaboration:** Power BI provides robust security features, allowing organizations to control access to data and reports. It also supports collaboration by enabling users to share and collaborate on reports and dashboards.
5. **Integration with Other Microsoft Products:** Power BI seamlessly integrates with other Microsoft products like Excel, Azure, and SQL Server, providing a comprehensive ecosystem for data analysis and reporting.

Managing healthcare chains can be challenging, particularly when clinics are situated at diverse locations. The current system design often results in issues such as ineffective data sharing, inconsistency in data, and increased program maintenance. To address these challenges, we've developed a centralised database for the Healthcare Management System. This solution aims to enhance efficiency by facilitating healthcare providers in the collection, storage, retrieval, and exchange of patient healthcare information. Ultimately, it

aims to improve patient care and optimise revenue generation across all clinics within the chain.

Objective:

The goal is to create comprehensive data visualisations for the USA health care system and its associated clinics located across the vast land. The visualisations will provide valuable insights into key aspects, including revenue generated every month, monthly procedural volume, expenses, patient overview, and patient satisfaction.

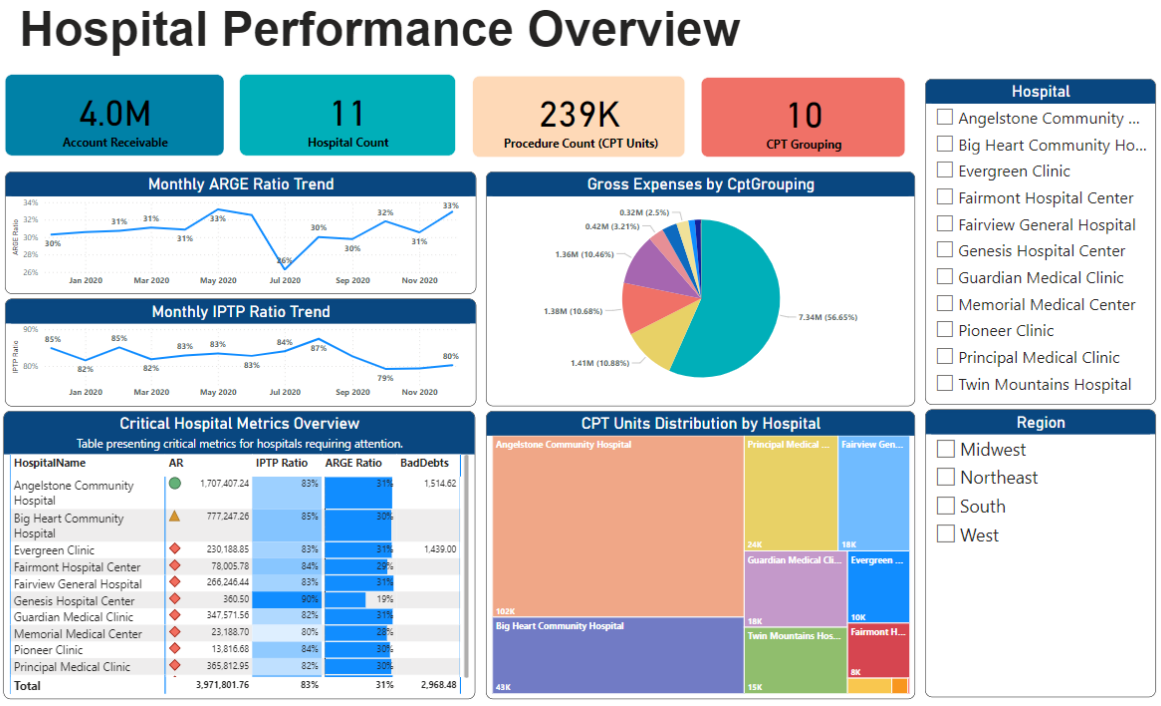
Data set

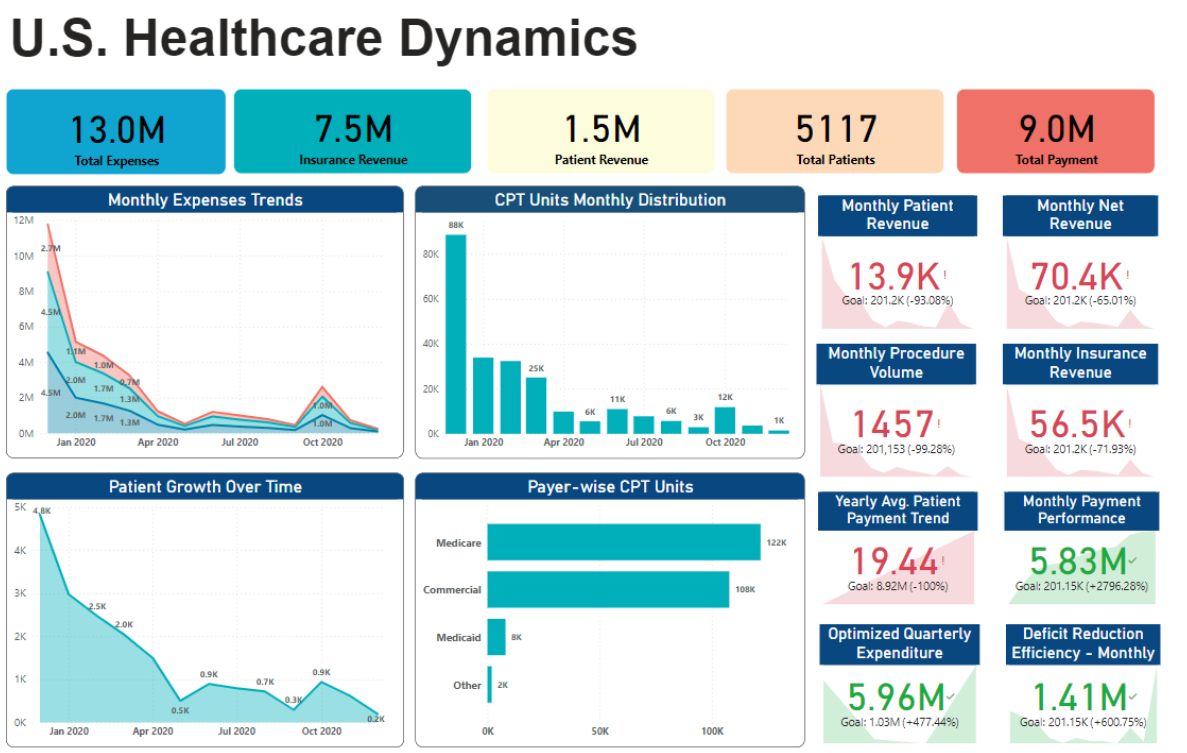
The data collection, comprising information on clinics, expenditures, patients, survey responses, visit counts, treatments administered, and medical staff, has been obtained from Kaggle.

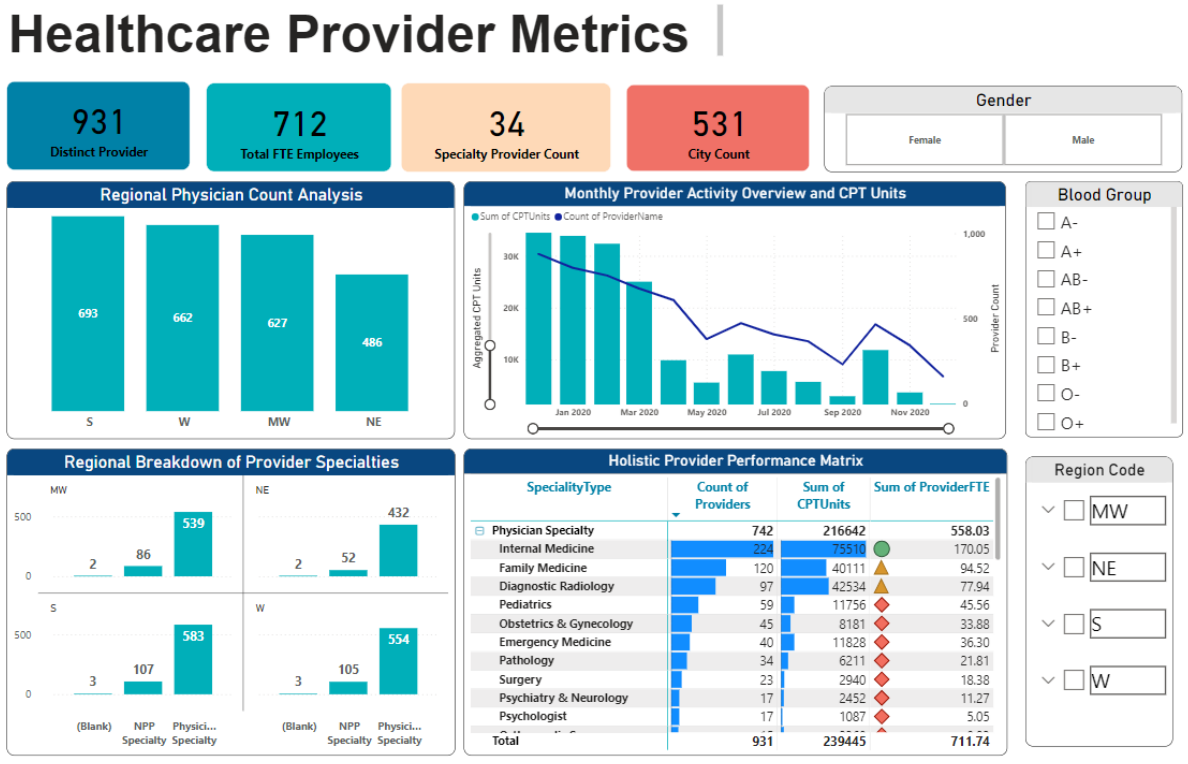
Dashboard

The dashboard contains five report pages – the first page dictates the overview of the dashboard the last four pages are dedicated to the monthly finance of the hospitals in the US and another for patient analysis reports based on many thresholds.

Financials Dashboard







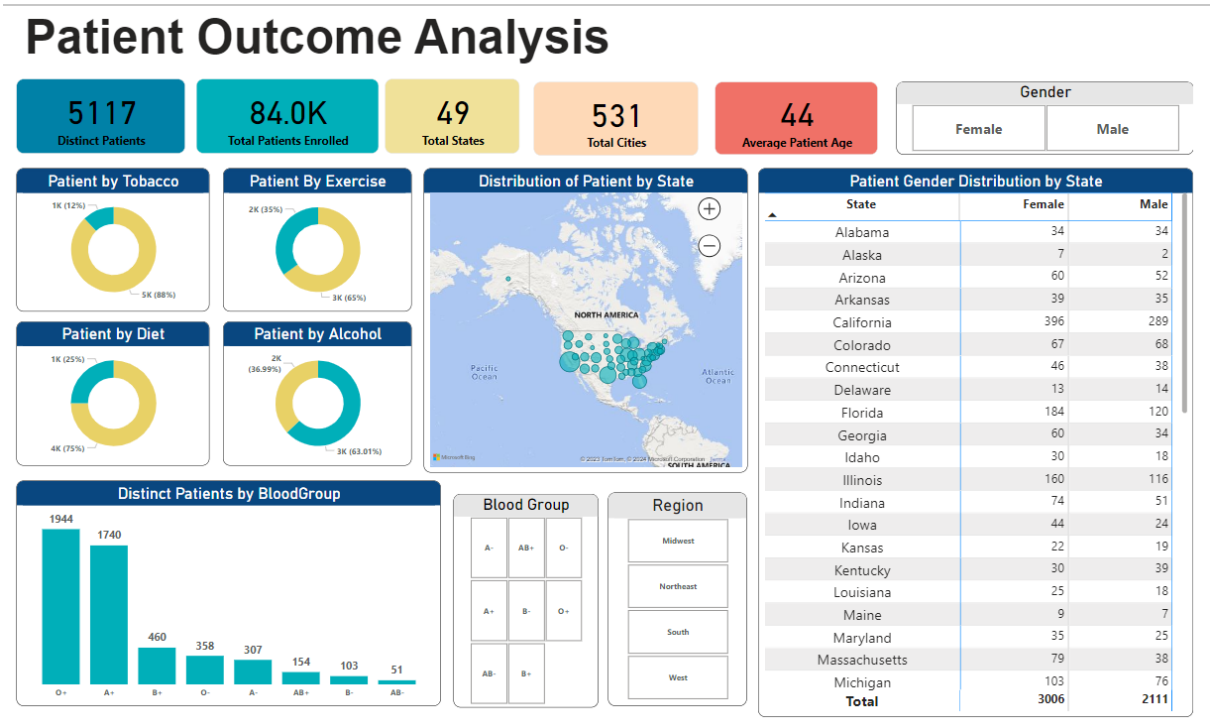
Overview:

A hospital dashboard serves as a comprehensive tool for monitoring and analyzing various critical metrics related to hospital performance. One key aspect is the evaluation of monthly Agre Ratio and IPTP Ratio trends, alongside

the differentiation of critical hospital metrics based on different areas. Here's an overview of how such a dashboard might be structured:

1. **Monthly Agre Ratio Trend:**
    - The Agre Ratio is a key indicator of the efficiency of agreements made within the hospital, reflecting the percentage of agreements that are adhered to or met.
2. **Monthly IPTP Ratio Trend:**
    - The IPTP (Inpatient to Patient) Ratio is crucial for assessing the utilisation of inpatient resources, providing insights into bed occupancy and demand.
3. **Critical Hospital Metrics Differentiated by Areas:**
    - The dashboard should be designed to categorise and differentiate critical hospital metrics based on various areas, such as departments, units, or service lines.
    - Each area would have its section on the dashboard, presenting relevant key performance indicators (KPIs) that are specific to that area.
4. **Monthly Expenses:**
    - Use Power BI's line charts or area charts to represent the monthly expenses trend.
5. **Patient Growth Over Time:**
    - Utilize the time intelligence features in Power BI to easily analyse trends over time.
6. **Regional Breakdown of Specialists:**
    - Utilize Power BI's built-in maps for a geographical breakdown.
    - Use filters to allow users to select specific regions and drill into more detailed data.

In summary, a well-designed hospital dashboard should offer a visual representation of monthly Agre Ratio and IPTP Ratio trends while providing a differentiated view of critical hospital metrics based on various areas. The goal is to facilitate data-driven decision-making and continuous improvement in hospital operations and patient care.



State	Female	Male
Alabama	34	34
Alaska	7	2
Arizona	60	52
Arkansas	39	35
California	396	289
Colorado	67	68
Connecticut	46	38
Delaware	13	14
Florida	184	120
Georgia	60	34
Idaho	30	18
Illinois	160	116
Indiana	74	51
Iowa	44	24
Kansas	22	19
Kentucky	30	39
Louisiana	25	18
Maine	9	7
Maryland	35	25
Massachusetts	79	38
Michigan	103	76
Total	**3006**	**2111**

Overview

A hospital dashboard designed to provide an overview based on various factors like patient's tobacco use, exercise habits, diet, alcohol consumption, distribution by state, blood groups, and regions can be a valuable tool for healthcare professionals and administrators. Here's an overview of what such a dashboard might include:

1. **Demographic Information:**
    - **Distribution by State:** Displays the number of patients in each state, allowing for regional analysis and resource allocation.
    - **Regions:** Categorised patients based on geographic regions, helping in understanding healthcare needs in different areas.
2. **Lifestyle Factors:**
    - **Tobacco Use:** Provided statistics on the percentage of patients who use tobacco, enabling targeted health education and intervention programs.
    - **Exercise Habits:** Showed the proportion of patients engaging in regular exercise, aiding in the development of fitness and wellness initiatives.
    - **Dietary Habits:** Presented data on patients' dietary patterns, allowing for the identification of nutrition-related health issues.

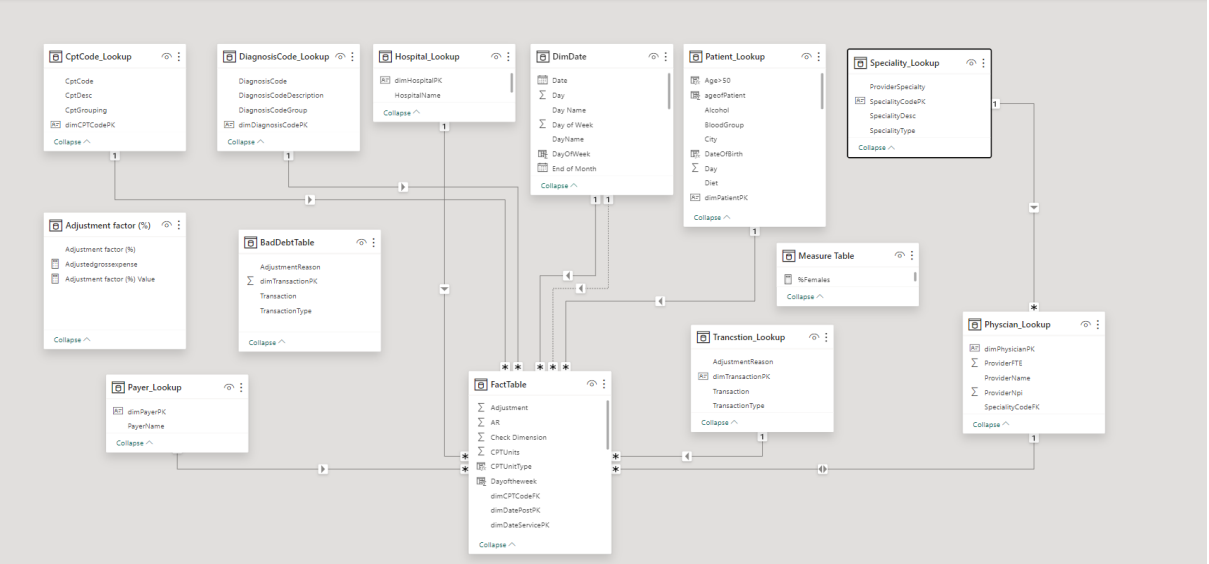
- **Alcohol Consumption:** Highlighted the percentage of patients who consume alcohol, helping in addressing alcohol-related health concerns.

3. **Blood Group Distribution:**
    - **Blood Groups:** Displaying the distribution of different blood groups among patients, aiding in blood donation management and emergencies.
4. **Clinical Information:**
    - **Admissions and Discharges:** Tracking the number of admissions and discharges, helping in managing hospital resources efficiently.
    - **Patient Outcomes:** Including information on patient outcomes, allowing for continuous improvement in the quality of healthcare services.

By integrating these elements into a comprehensive hospital dashboard, healthcare professionals can gain insights into patient demographics, lifestyles, and health metrics. This information can be invaluable for designing targeted health interventions, optimising resource allocation, and improving overall healthcare delivery.

Data Model

Entity Relationship Diagram illustrating data structure and relationships: Gain a deeper understanding of the underlying data architecture through the Entity Relationship Diagram (ERD). This visual representation showcases the relationships within the healthcare analytics project.



Link -

Power BI

👍 https://app.powerbi.com/links/8Y14sXvRB-?ctid=bc5b2879-3fac-469a-b8c4-994705bc09d7&pbi_source=linkShare&bookmarkGuid=182617f9-ac92-4780-84e3-f396aa804c68

Summary

By visualizing data clearly and interactively, the US Health care system and the Hospitals associated with it can make informed decisions, identify opportunities for improvement, and strategically plan for future growth and enhanced patient care.