BUSINESS INTELLIGENCE FOR HOSPITAL SERVICE UTILIZATION AND COST ANALYSIS

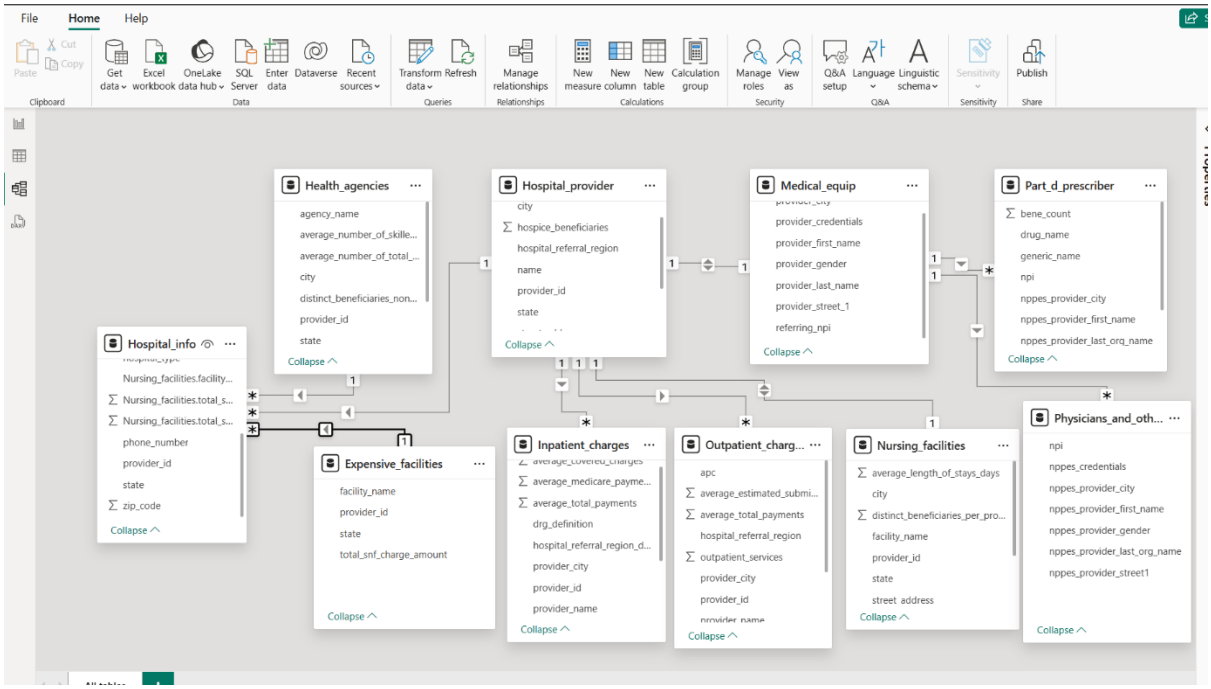
Executive Summary

Abstract

The background of this report is to conduct a comprehensive healthcare data analysis using the medicare dataset(2014) from the Centers for Medicare & Medicaid Services(CMS) as a public dataset. This secondary research focused on visualization patterns in service utilization, financial charges, and patient management across different states and healthcare facilities in the United States. This research aims to transform complex healthcare data into actionable insights by leveraging Power BI's data modelling and visualization capabilities. This analysis will support data-driven decision by identifying trends in inpatient and outpatient costs, regional disparities, medication behaviors and performance for hospitals and nursing facilities. This report serves to enhance transparency, efficiency and financial planning in healthcare management and service through interactive visualisation and evidence-based business intelligence.

Data Model

The data model of this report adopts a snowflake schema structure to mange complex healthcare systems. This schema structure provides analytical queries by separating fact tables from dimensions tables. We organize nine related tables into normalized and interlinked entities as primary built relationship. This model promotes data consistency, reduces redundancy, support detailed and scalable analysis.



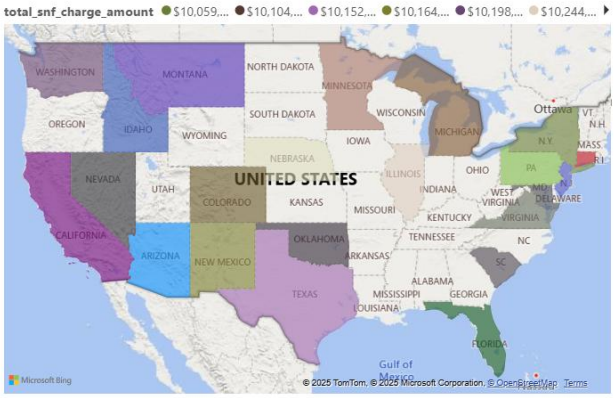
Data Model - Snowflake Schema

Key Finding

- Medicare SNF charges are higher in states like California, Michigan, and New York, suggesting that costs are concentrated in high-billing facilities or larger healthcare systems.
- The average hospital bill is about $170 per day, with the highest daily rates reported in Phoenix ($1.52K) and Dallas ($1.49K).
- Out of all the hospitals analyzed, 279 are classified as high-cost, and 601 are classified as normal-cost.
- The top three SNFs with total charges over $10 million are Albuquerque, Aurora, and Las Vegas, even though their average duration of stay (~26.77 days) is comparable.
- At an average cost of $107.60, hospital clinic visits (DRG 0634) account for approximately 1.32 million visits, making them the most often used outpatient service.
- Cardiac Imaging (DRG 0377) and Nerve Injections (DRG 0203) are the most costly outpatient procedures, with average prices above $1,600, even though their use is lower.
- High-utilization services may not always correspond with high-cost services, indicating possible areas for cost control. This discrepancy in outpatient cost efficiency is substantial.

Medicare SNF Reimbursement Patterns: Uncovering State-Level Cost Trends and Facility Outliers

Total Medicare SNF Charges by State — Cost Concentration Across U.S



This map shows the distribution of total Medicare SNF charges by state. States like New York, Michigan, and Texas exhibit higher spending, indicating either larger facility networks or higher per-facility costs. Use the slicer to explore individual states and uncover regional spending trends

State wit Facilities Type

- (Blank)
- AZ
- CA
- CO

state	total_snf_charge_amount	facility_name	Avg_Length_of_Stay
			26.77
NM	$11,723,030	ADVANCED HEALTH CARE OF ALBUQUERQUE	26.77
CO	$13,838,125	ADVANCED HEALTH CARE OF AURORA	26.77
NV	$10,272,336	ADVANCED HEALTH CARE OF LAS VEGAS	26.77
NJ	$33,162,619	ALARIS HEALTH AT HAMILTON PARK	26.77
NJ	$12,026,911	ALARIS HEALTH AT HARBOR VIEW	26.77
NJ	$14,415,371	ALARIS HEALTH AT THE FOUNTAINS	26.77
IL	$11,110,009	ALDEN DES PLAINES REHAB & HC	26.77
IL	$12,719,823	ALDEN NORTH SHORE REHAB & HCC	26.77
CA	$15,171,645	ALDEN TERRACE CONV HOSP	26.77
NY	$23,241,230	AMSTERDAM NURSING HOME CORP (1992)	26.77
Total			26.77

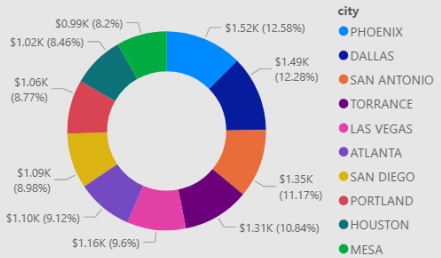
Hospital Facility Cost Overview Report

Average Hospital Payment Per Day(Approx.)

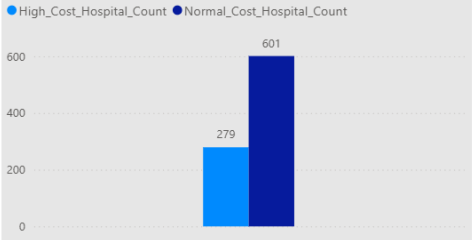
$170

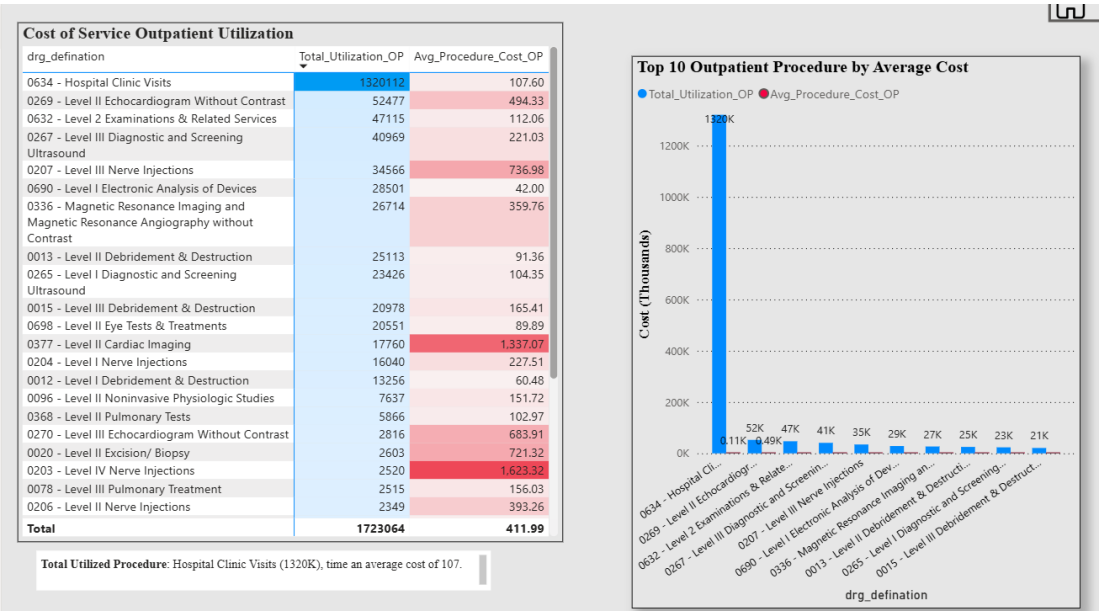
city	Sum of Avg_payment_per_day	Hospice_Cost_Level
ABILENE	$166.38	Normal
ADA	$147.85	Normal
ADDISON	$332.05	Normal
AHOSKIE	$197.09	High
AIKEN	$146.56	Normal
AKRON	$206.55	High
ALBANY	$145.10	Normal
ALBUQUERQUE	$186.96	High
ALBUQUERQUE	$604.65	Normal
ALEXANDER CITY	$137.25	Normal
ALEXANDRIA	$192.47	High
ALEXANDRIA	$145.59	Normal
ALLENTOWN	$312.83	Normal
ALPENA	$140.29	Normal
ALPHARETTA	$150.78	Normal
ALT DE SAN JUAN	$104.89	Normal
ALTAMONTE SPRINGS	$171.34	Normal
ALTON	$142.63	Normal
AMARILLO	$321.50	Normal
Total	**$149,704.74**	

Average Hospital Payment per Day by City (Top 10)



Count of Hospital Cost Level





Recommendations

This research provides a comprehensive view of service utilization, inpatient and outpatient charges, prescription patterns, and provider performance across U.S. states. . The findings offer a data-driven foundation for evaluating the financial sustainability and operational efficiency of Medicare services. The project's business intelligence dashboards show how useful visual analytics can be in the healthcare industry. They make it possible for administrators, legislators, and healthcare professionals to keep an eye on important metrics, allocate resources more effectively, and make well-informed strategic choices that may improve patient outcomes and lower expenses.

Section 2: Business Report

1. Introduction

Data analysis in the healthcare sector is critical for improving patient outcomes, optimizing resource allocation, and supporting evidence-based policy development. The Centers for Medicare & Medicaid Services (CMS) provide comprehensive public datasets that offer valuable insights into healthcare service utilization, treatment costs, and provider performance across the United States. The analysis of the 2014 CMS Medicare dataset, which contains comprehensive data on nursing homes, prescription medication use, inpatient and outpatient treatments, and provider fees, is the main objective of this paper. This report also demonstrates essential BI skills such as data preparation, DAX calculation, Power Query transformations, and dashboard design, culminating in a scalable, data-driven approach to healthcare management. Using Power BI as the core business intelligence tool, this report aims to

transform complex Medicare data into interactive visualizations that support informed decision-making for patient management, financial planning, and policy development.

2. Dataset

For this business intelligence report section , we used these dataset https://www.kaggle.com/code/shivamb/deep-healthcare-analysis-using-bigquery/notebook form Kaggle . This detail description of these datasets are explained in section 1.

3. Data Model

Using Power BI's Data View and Model View features, the unstructured Medicare dataset was converted into a scalable and organized data model, as described in the preceding sections(Bakhshi and Wade, 2023). Core fact tables (such inpatient_charges and outpatient_charges) were separated from supporting dimension tables (hospital_provider, medical_equip, nursing_facilities, etc.) after the original flat file was standardized into a snowflake schema.

This relational structure facilitates effective cross-reporting and filtering, as well as a thorough understanding of Medicare cost trends across different areas and healthcare organizations.

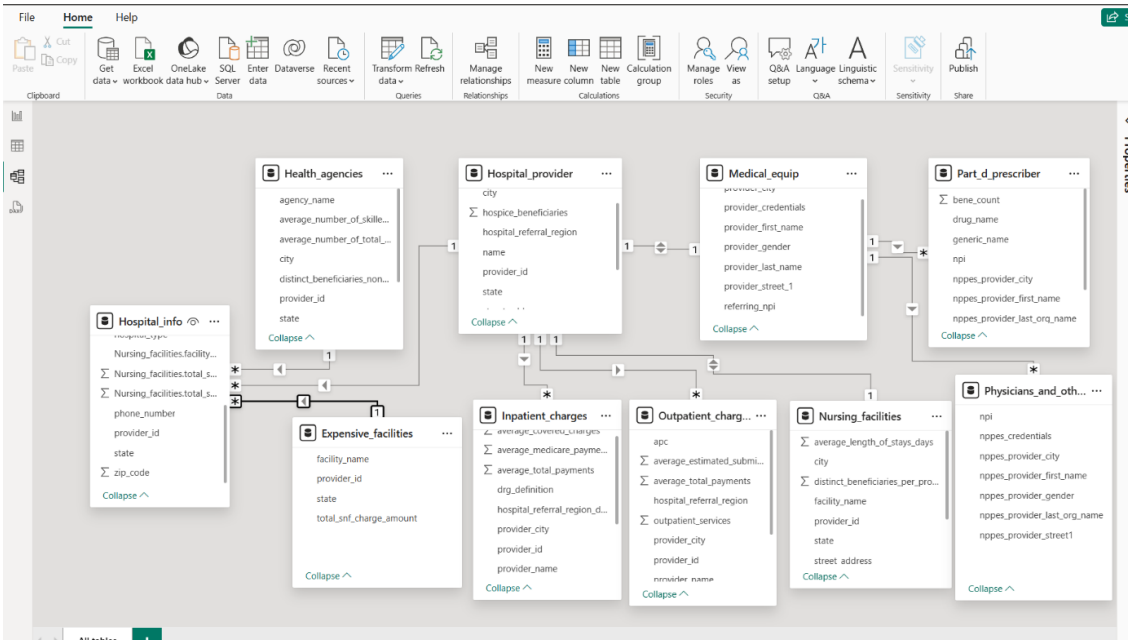


Figure 1: Data Modelling

4. Finding based on Business Intelligent Analysis and Evaluation

Business Intelligence Report was created to visualize and analyse with various Business Intelligence questions. Variety of graphs and tables were created using Power BI Visualization tools.

This report addresses following questions.

- What is the average cost for inpatient and outpatient treatment in each city?
- What are the trends in average Medicare payments for hospitals in each city?
- How has the average Medicare payment per provider changed over time across hospitals within a specific state or referral region?
- Which healthcare facilities perform best based on cost efficiency, average length of stay, and total Medicare charges?
- Which cities receive the highest Medicare reimbursements for major inpatient procedures, and which DRGs contribute most to those costs?
- How does average Medicare payment vary across hospital types (public, private, nonprofit)?
- Which hospices have the highest per-day Medicare payments, and how does that compare to national averages?
- What is the count of patients for hospitals at different city?
- Are outpatient services more cost-efficient than inpatient services across hospital referral regions?
- Which hospitals consistently show high average payment per day for hospice or inpatient care.
- What is the average cost for inpatient and outpatient treatment in each city?

Medicare Payment Performance Visual Report Analysis

This analysis aims to evaluate the average cost of Medicare inpatient and outpatient treatments across different cities, identifying the most and least expensive regions and understanding overall spending patterns in the healthcare system.

What is the average cost for inpatient and outpatient treatment in each city?

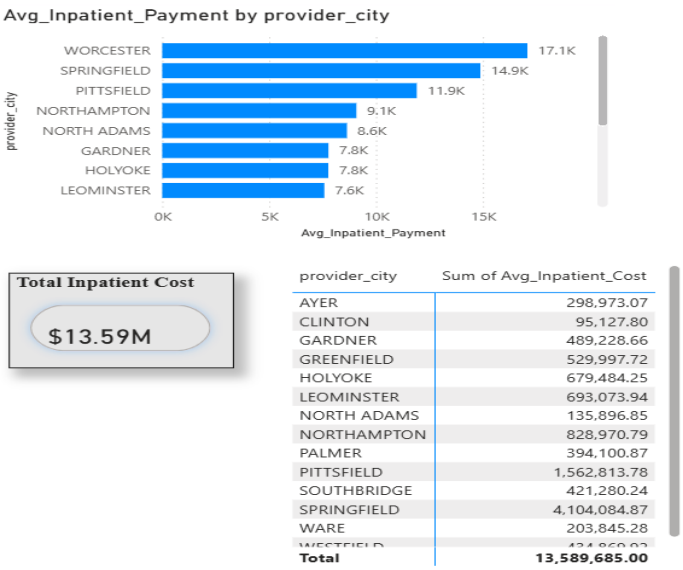
If we visualise this question, we need to measure the average cost for inpatient services by dividing the total payments by the count of service. We used DAX for measurement estimates as show in below figure.

```
Avg_Inpatient_Cost =
DIVIDE(
    SUM(inpatient_charges[average_total_payments]),
    COUNT(inpatient_charges[average_total_payments])
)
```

```
Avg_Medicare_Payment_Per_City =
CALCULATE(
    AVERAGE(inpatient_charges[average_medicare_payments]),
    ALLEXCEPT(inpatient_charges, inpatient_charges[provider_city])
)
```

```
Avg_Inpatient_Payment =
AVERAGE(Inpatient_charges[average_medicare_payments])
```

These three figures show the measure of Avg_Inpatient_Cost, Avg_Medicare_Payment_Per_City and Avg_Inpatient_Payment using DAX formula.



provider_city	Sum of Avg_Inpatient_Cost
AYER	298,973.07
CLINTON	95,127.80
GARDNER	489,228.66
GREENFIELD	529,997.72
HOLYOKE	679,484.25
LEOMINSTER	693,073.94
NORTH ADAMS	135,896.85
NORTHAMPTON	828,970.79
PALMER	394,100.87
PITTSFIELD	1,562,813.78
SOUTHBRIDGE	421,280.24
SPRINGFIELD	4,104,084.87
WARE	203,845.28
Total	13,589,685.00

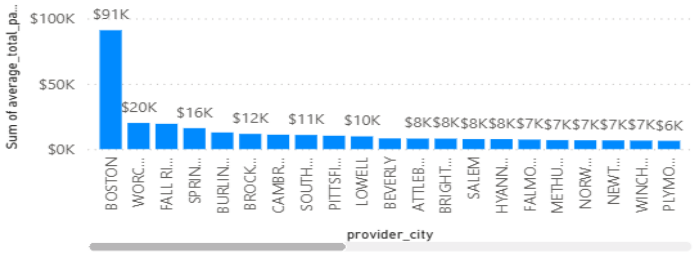
Figure 2: This visual present for the amount of inpatient Medicare cost.

In this visual report, we analysis for inpatient medicare cost , which city have the highest payment amount that this analysis describes the above figure. This visual report show that *Worcester* leads with an average payment of **$17.1K**, followed by *Springfield ($14.9K)* and *Pittsfield ($11.9K) from bar chart visual*.

```
Avg_Outpatient_Cost =
DIVIDE(
    SUM(outpatient_charges[average_total_payments]),
    COUNT(outpatient_charges[average_total_payments])
)
```

```
Avg_Procedure_Cost_OP =
DIVIDE(
    SUM(Outpatient_charges[average_total_payments]),
    COUNT(Outpatient_charges[drg_defination])
)
```

We take new measures for outpatient analysis that Avg_Outpatient_Cost and Avg_Procedure_Cost_OP using DAX formula. This measurement is important for analysis visual report.



Total Outpatient Cost

$411.991K

provider_city	Sum of Avg_Outpatient_Cost
ATTLEBORO	7,415.84
AYER	4,531.90
BEVERLY	7,827.83
BOSTON	81,574.22
BRIGHTON	8,239.82
BROCKTON	10,299.78
BURLINGTON	11,947.74
CAMBRIDGE	13,595.70
CLINTON	3,295.93
FALL RIVER	16,067.65
FALMOUTH	5,355.88
FRAMINGHAM	7,003.85
GARDNER	5,767.87
Total	**411,991.00**

Figure 3: This visual present for the amount of outpatient Medicare cost.

In this visual report, we analysis for outpatient Medicare cost , which city have the highest payment amount that this analysis describes the above figure. The **total outpatient cost** is **$411.99K** across all cities. This cost disparity highlights regional differences in service complexity, pricing, or patient needs. These insights can support targeted reviews of high-cost areas and help identify models of cost-efficient care in lower-cost regions.

```
Total_Reimbursement =
SUMX(
    Inpatient_charges,
    Inpatient_charges[average_medicare_payments] * Inpatient_charges[total_discharges]
)
```

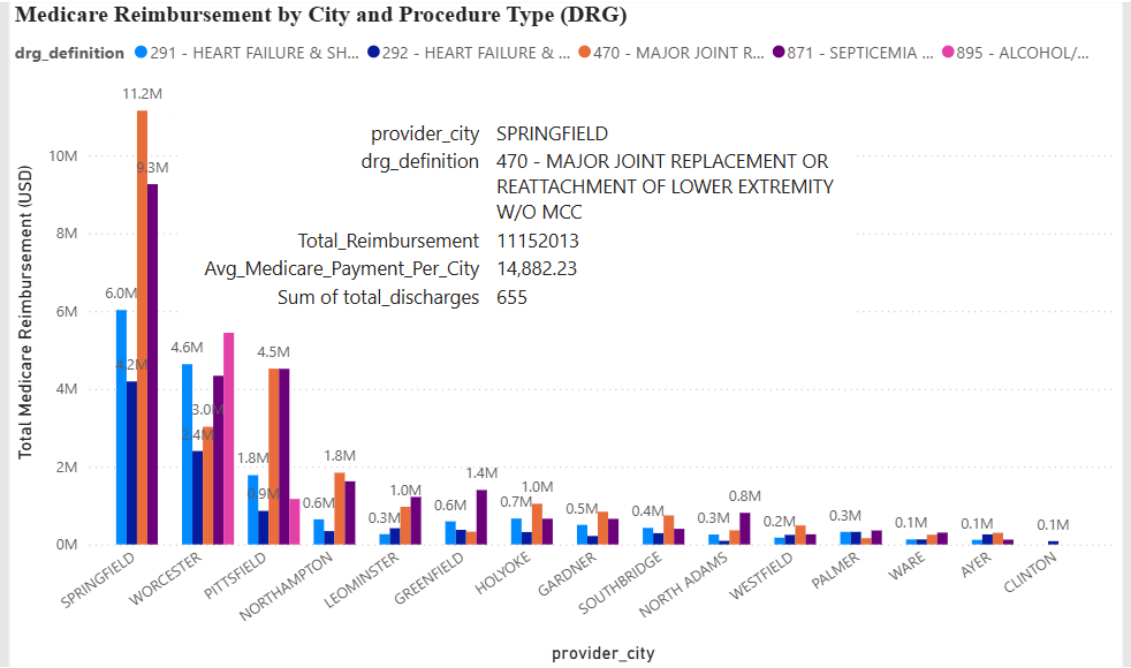


Figure 4: Medicare total amount with city

This chart presents Medicare reimbursement across cities for major inpatient procedure categories (DRGs). Springfield ranks highest, primarily driven by joint replacements (DRG 470), while Worcester and Pittsfield also show substantial spending across heart failure and septicemia cases. Use the interactive DRG filter to explore which procedures dominate cost per city, enabling more informed resource planning and cost oversight.

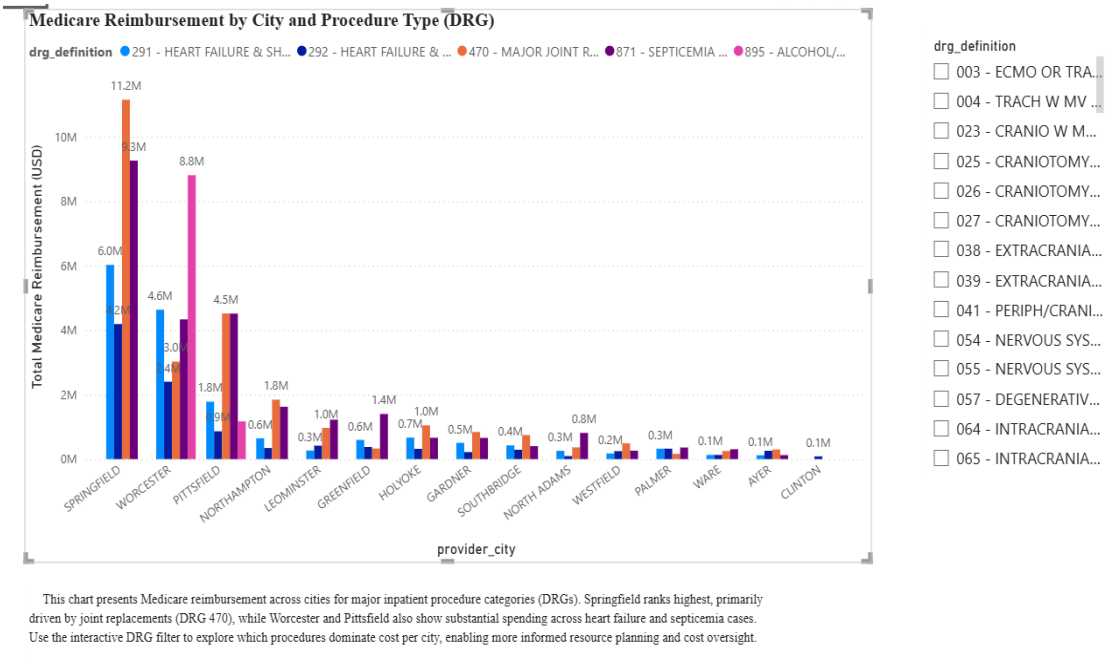


Figure 5: Medicare cost visual report

This chart displays total Medicare reimbursements across cities and procedure types, categorized by Diagnosis-Related Groups (DRGs).

Hospital Payment amount Visual report

This analysis explores inpatient hospital activity by calculating the total number of discharges per city, which serves as a proxy for hospital service volume and patient throughput.

We used the following DAX formula to create the measure:

```
Total_Patients =
CALCULATE(
    SUM(Inpatient_charges[total_discharges])
)
```

The chart below displays total inpatient discharge volume per city and provides an aggregated total for hospital payment analysis.

provider_city	Total_Patients
SPRINGFIELD	13523
WORCESTER	10274
PITTSFIELD	4672
NORTHAMPTON	1788
HOLYOKE	1407
LEOMINSTER	1329
GREENFIELD	1233
GARDNER	986
PALMER	778
SOUTHBRIDGE	773
WESTFIELD	718
AYER	484
WARE	280
NORTH ADAMS	220
CLINTON	103
Total	**38568**

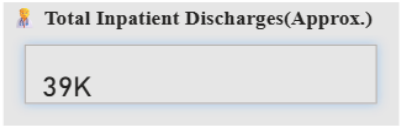
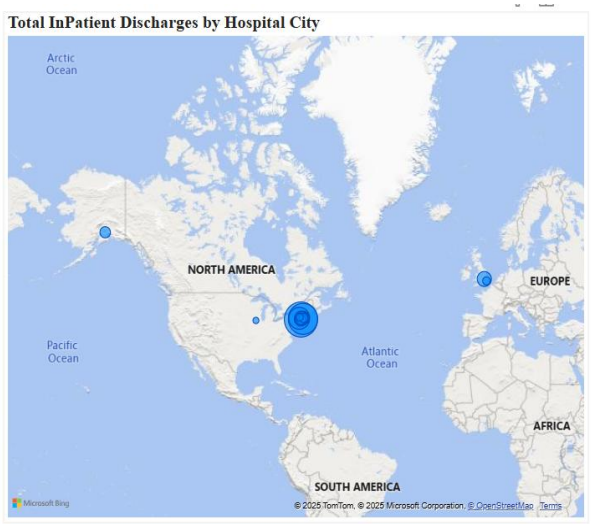


Figure 6: Total inpatient discharges

Discharge Volume Visual Report Analysis

This section presents a geospatial and tabular analysis of hospital discharge volume—both **inpatient** and **outpatient**—across provider cities. The goal is to identify regional care distribution patterns, evaluate facility utilization rates, and support strategic planning for health service delivery.



provider_city	hospital_referral_region_description	Total_Patients
AYER	MA - Boston	484
CLINTON	MA - Worcester	103
GARDNER	MA - Worcester	986
GREENFIELD	MA - Springfield	1233
HOLYOKE	MA - Springfield	1407
LEOMINSTER	MA - Worcester	1329
NORTH ADAMS	MA - Springfield	220
NORTHAMPTON	MA - Springfield	1788
PALMER	MA - Springfield	778
PITTSFIELD	NY - Albany	4672
SOUTHBRIDGE	MA - Worcester	773
SPRINGFIELD	MA - Springfield	13523
WARE	MA - Springfield	280
WESTFIELD	MA - Springfield	718
WORCESTER	MA - Worcester	10274
Total		**38568**

Figure 7: Show map graph for the discharge number of inpatients

This map graph was plotted to visualize the discharge number of inpatients across the city. The size of bubbles over map represents the count of patients for that city. We calculate the count of patient for that city using DAX formula as show in below. Furthermore, a table on right was plotted to visualize the exact count of patients per country.

```
1 Total_Patients =
2 CALCULATE(
3     SUM(Inpatient_charges[total_discharges])
4 )
5
```

The total inpatient discharges are **38,568** across all cities. Activity is regionally concentrated in central and western Massachusetts. These insights highlight areas of high hospital utilization and support planning for facility capacity and clinical resource distribution.

provider_city	hospital_referral_region	Total_OutPatients
ATTLEBORO	RI - Providence	13012
AYER	MA - Boston	2924
BEVERLY	MA - Boston	33322
BOSTON	MA - Boston	717644
BRIGHTON	MA - Boston	19933
BROCKTON	MA - Boston	15204
BURLINGTON	MA - Boston	235144
CAMBRIDGE	MA - Boston	67120
CLINTON	MA - Worcester	1380
FALL RIVER	MA - Boston	41515
FALMOUTH	MA - Boston	5246
FRAMINGHAM	MA - Boston	8128
GARDNER	MA - Worcester	7038
GREENFIELD	MA - Springfield	3771
HAVERHILL	MA - Boston	1406
HOLYOKE	MA - Springfield	15733
HYANNIS	MA - Boston	21474
LAWRENCE	MA - Boston	2065
LEOMINSTER	MA - Worcester	5337
LOWELL	MA - Boston	17850
MARLBOROUGH	MA - Worcester	1016
MELROSE	MA - Boston	20534
METHUEN	MA - Boston	9360
MILFORD	MA - Boston	3366
Total		**1723064**

Figure 8: Show map graph for the discharge number of outpatients

This map graph was plotted to visualize the discharge number of outpatients across the city. The size of bubbles over map represents the count of patients for that city. We calculate the count of patient for that city using DAX formula as show in below. Furthermore, a table on right was plotted to visualize the exact count of patients per country.

```
1 Total_OutPatients =
2 SUM(Outpatient_charges[outpatient_services])
3
```

The total of **1,723,064** outpatient visits across all cities. Outpatient care is urban-centric, driven by higher service accessibility and centralized health systems. This reflects a broader shift toward outpatient care models and indicates where operational efficiency and patient throughput are highest.

Hospital Facility Cost Visual Report

This report examines hospital facility costs by measuring the **average payment per day** across U.S. cities and categorizing hospitals into **high-cost** and **normal-cost** tiers based on payment levels. The analysis helps stakeholders identify cost-intensive areas and evaluate resource efficiency. Avg_payment_per_day and Hospice_cost_Level are measure for this following visual chart.

```
Avg_payment_per_day = Hospital_provider[total_medicare_payment_amount]/Hospital_provider[total_days]
```

```
Hospice_Cost_Level =
IF(Hospital_provider[Avg_payment_per_day] > 180, "High", "Normal")
```

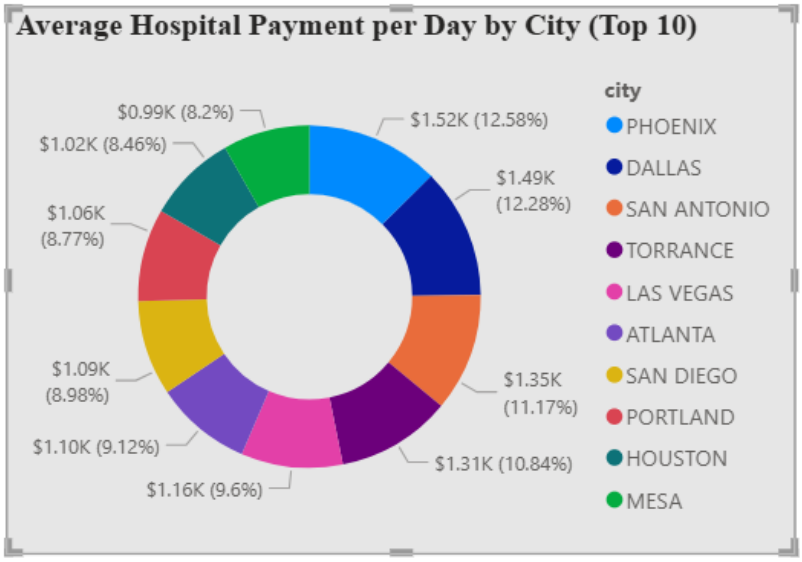


Figure 9: Average hospital payment chart

This visual chart provides Top 10 cities based on the average hospital payment a day. PHOENIX city has the highest payment amount than other cities that it has 12.58%. MESA city is described with the lowest amount of payment in this chart.

We created new column as Hospice_Cost_Level. Hospital Level is defined as High and Normal level that measure using DAX language.

```
Hospice_Cost_Level =
IF(Hospital_provider[Avg_payment_per_day] > 180, "High", "Normal")
```

After create Hospital Cost Level, we can start measuring for High_Cost_Hospital_Count and Normal_Cost_Hospital_Count.

```
High_Cost_Hospital_Count =
CALCULATE(
    COUNTROWS(Hospital_provider),
    Hospital_provider[Hospice_Cost_Level] = "High"
)
```

```
Normal_Cost_Hospital_Count =
CALCULATE(
    COUNTROWS(Hospital_provider),
    Hospital_provider[Hospice_Cost_Level] = "Normal"
)
```

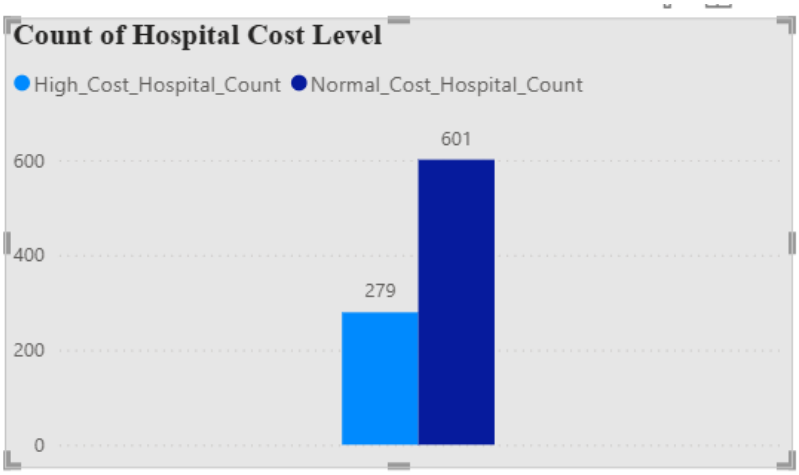


Figure 10: Count of hospital cost level

This visual report describes the count of high and normal costs associated with Hospital Cost Level.

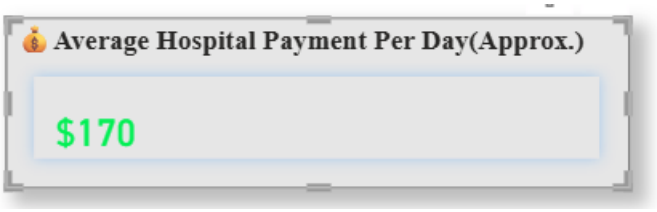
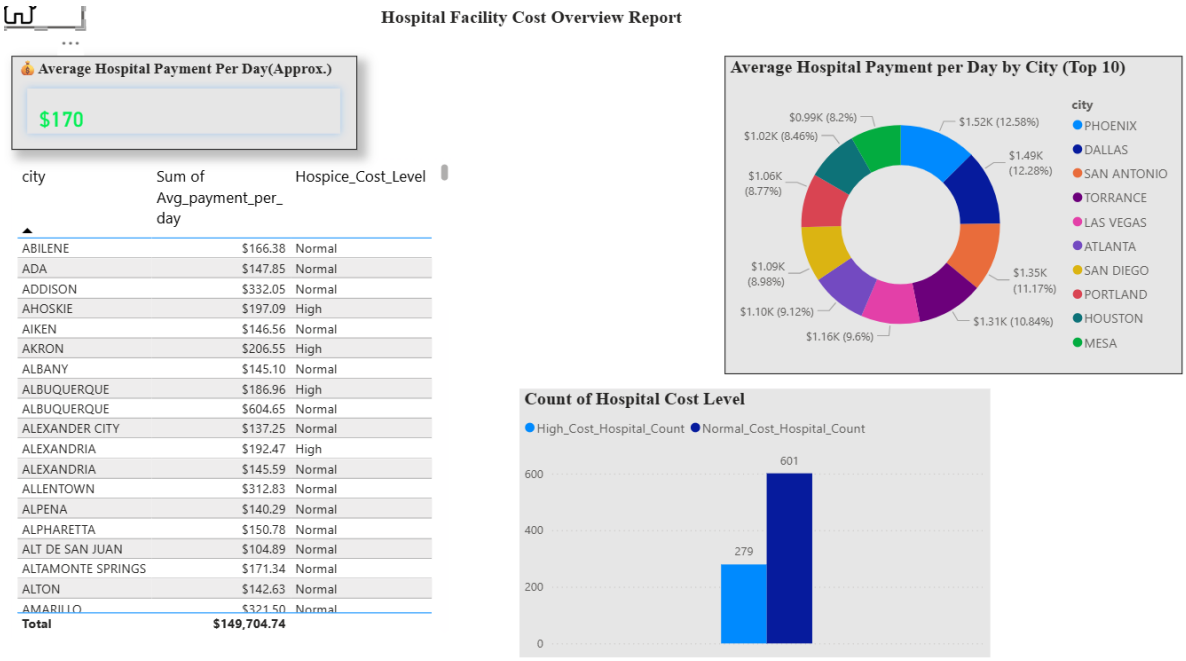


Figure 11: show approximately average hospital payment per day



city	Sum of Avg_payment_per_day	Hospice_Cost_Level
ABILENE	$166.38	Normal
ADA	$147.85	Normal
ADDISON	$332.05	Normal
AHOSKIE	$197.09	High
AIKEN	$146.56	Normal
AKRON	$206.55	High
ALBANY	$145.10	Normal
ALBUQUERQUE	$186.96	High
ALBUQUERQUE	$604.65	Normal
ALEXANDER CITY	$137.25	Normal
ALEXANDRIA	$192.47	High
ALEXANDRIA	$145.59	Normal
ALLENTOWN	$312.83	Normal
ALPENA	$140.29	Normal
ALPHARETTA	$150.78	Normal
ALT DE SAN JUAN	$104.89	Normal
ALTAMONTE SPRINGS	$171.34	Normal
ALTON	$142.63	Normal
AMARILLO	$321.50	Normal
Total	**$149,704.74**	

Figure 12: Hospital facility cost overview visual report

This visual report presents for Hospital Facility Cost with average amount of payment. There is tow type of hospital cost that divide with high value and normal value. The Cost of normal hospital is cheaper than the high hospital cost. The total of normal hospital is greater than the high-cost hospital.

Inpatient Service Utilization

Firstly, we measure the total utilization and average cost with DAX for visualising this report.

```
Avg_Procedure_Cost_IP =
DIVIDE(
    SUM(inpatient_charges[average_total_payments]),
    COUNT(inpatient_charges[drg_definition])
)
```

```
Total_Utilization_IP = SUM(Inpatient_charges[total_discharges])
```

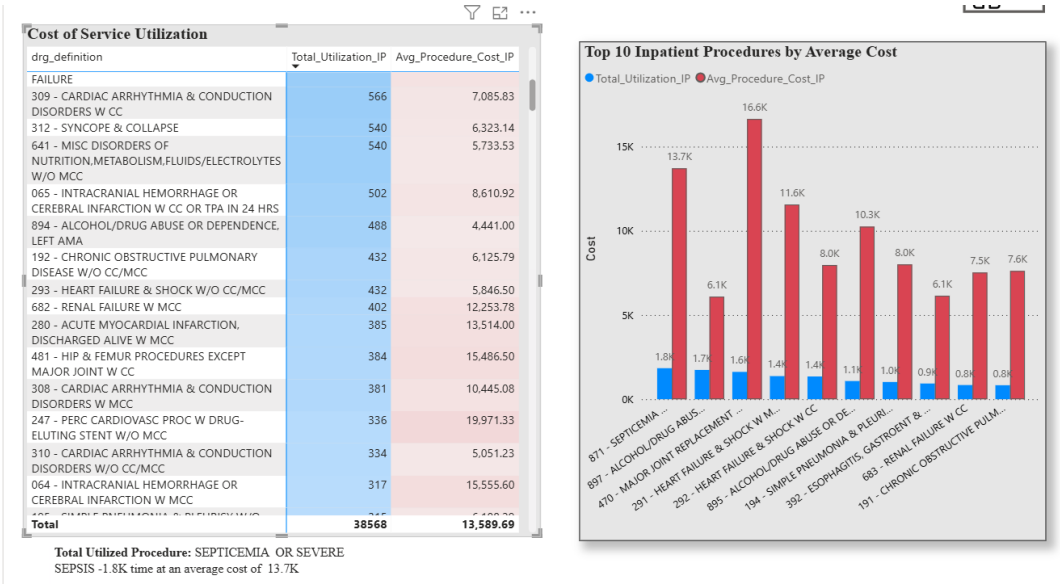


Figure 13: Inpatient service utilization report

Outpatient Service Utilization

```
Avg_Procedure_Cost_OP =
DIVIDE(
    SUM(Outpatient_charges[average_total_payments]),
    COUNT(Outpatient_charges[drg_defination])
)
```

```
Total_Utilization_OP = SUM(outpatient_charges[outpatient_services])
```

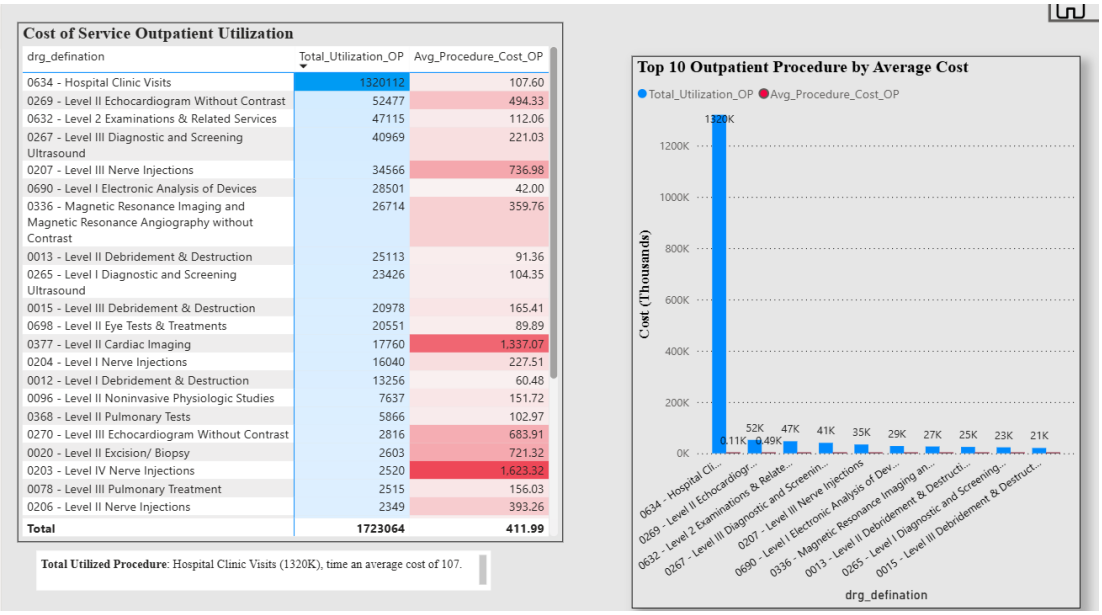


Figure 14: Outpatient service utilization

This above table presents the cost of each facilities, define the blue color for highest cost of total utilizaiton and red color for highest amount of average cost. The right visual chart presents for top 10 outpatient procedures based on average cost.

Facilities Outlier

```
1 Avg_Charge_Per_Facility =
2     DIVIDE(SUM(Expensive_facilities[total_snf_charge_amount]), COUNT(Expensive_facilities[facility_name]))
```

```
1 Top_State =
2     CALCULATE(MAX(Expensive_facilities[state]),
3         TOPN(1, ALL(Expensive_facilities), Expensive_facilities[total_snf_charge_amount], DESC))
```

```
1 Total_US_SNF_Charge = SUM(Expensive_facilities[total_snf_charge_amount])
```

This measures was created by taking new measures as above figure. This visual seeeks that Medicare charges vary significantly by state and facility. Despite similar lengths of stay, cost discrepancies highlight differences in billing rates, patient acuity, or facility efficiency. These insights are essential for Medicare administrators and policymakers to evaluate cost drivers.

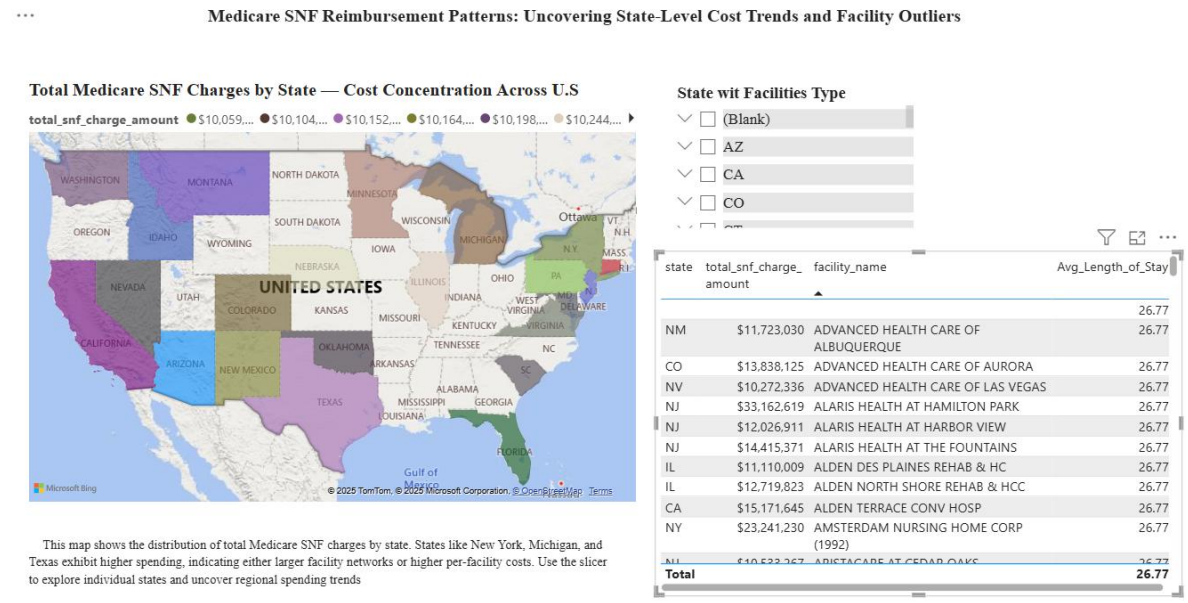


Figure 15: Medicate payment with trends and facility outliers

Ranking Hospital Cost

This measure is very importance for this visual because of the main of whole visual. We divided four parts for hospital ownership group with DAX language.

After group dividing, We can start measuring for average medicare by ownership. Furthermore, the average hospital payment per day was determined using DAX language like that below figure.

```
Avg_Medicare_By_Ownership =
CALCULATE(
    AVERAGE(Inpatient_charges[average_medicare_payments]),
    ALLEXCEPT('Hospital_info', 'Hospital_info'[Ownership_Group])
)

```

```
Avg_Hospice_Payment_Per_Day =
AVERAGE(Hospital_provider[Avg_payment_per_day])

```

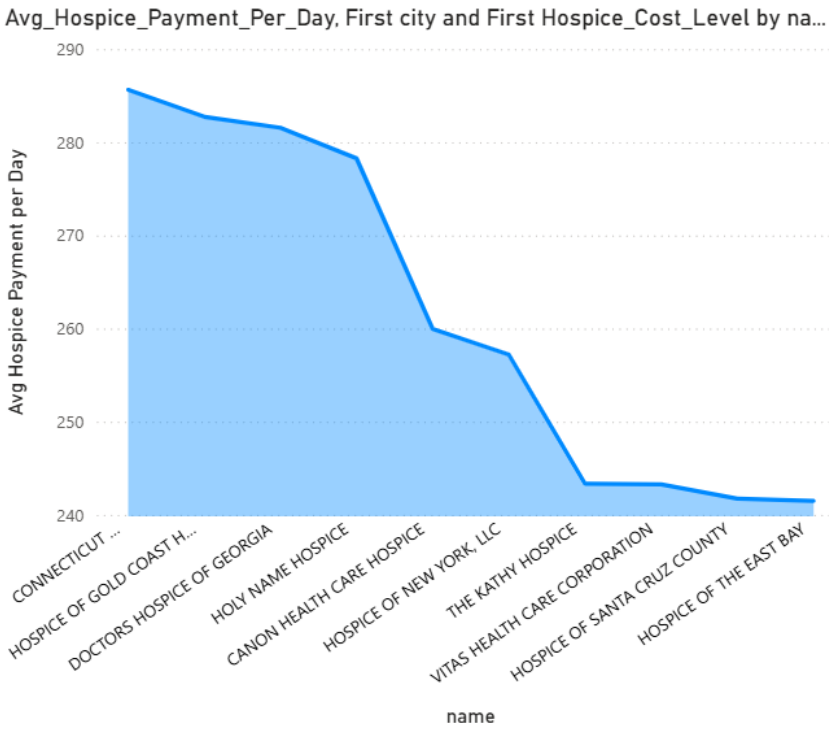


Figure 16: Average hospital payment per day report

```
National_Avg_Hospice_Payment =
AVERAGE('Hospital_provider'[Avg_payment_per_day])

```

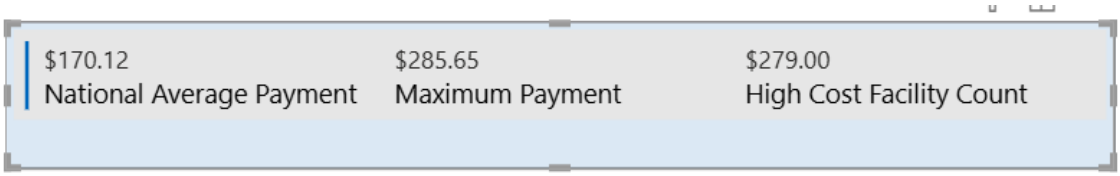
```
Max_Hospice_Payment =
MAX('Hospital_provider'[Avg_payment_per_day])

```

```
High_Cost_Hospice_Count =
CALCULATE(
    COUNTROWS('Hospital_provider'),
    'Hospital_provider'[Hospice_Cost_Level] = "High"
)

```

We take new three measure that national payment, maximum payment and high-cost facilities count for create the following card. This card shows the average amount of payment for each to understand clearly other audiences.



Ask Question Exploration (Q&A)

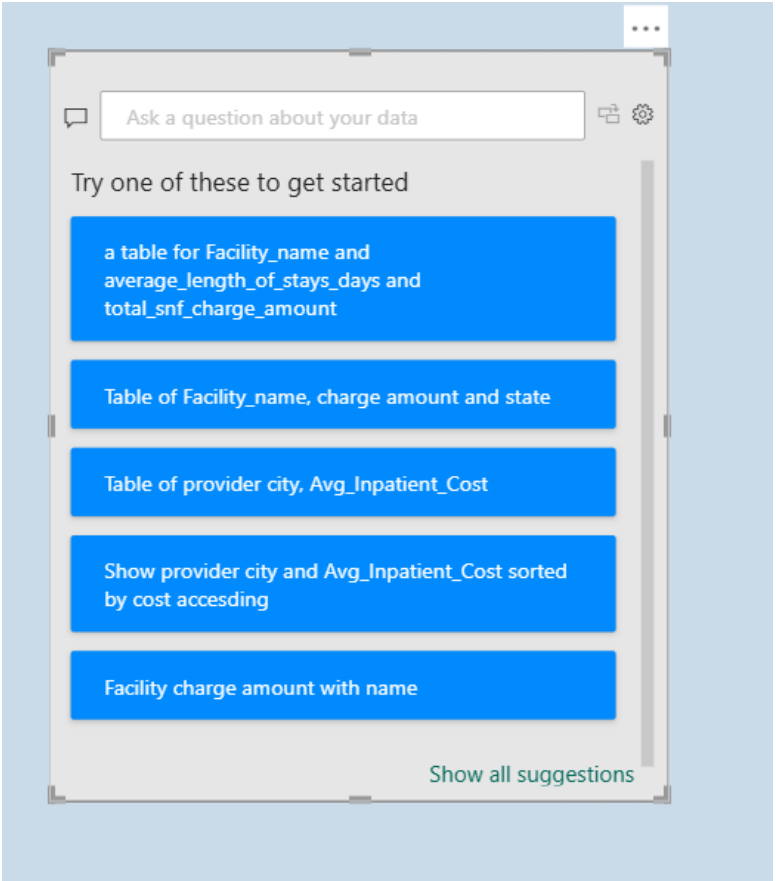


Figure 17: Q&A exploration

We used Q&A feature of Power BI to explore medicare data through natural language queries. We created suggested question in this visual. So, audiences can easily ask questions with suggestions questions. The following graph asked a question that the facility charge

amount with name and show the table of facility name , charge amount and state. This was improvement for data-driven navigation with the report using Q&A explore.

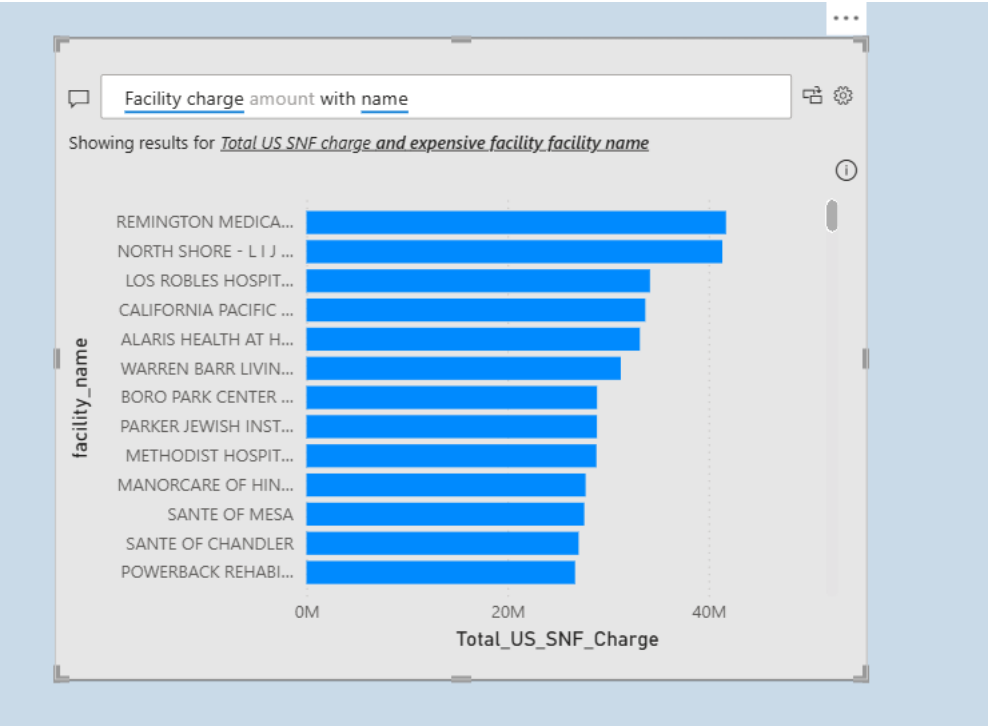
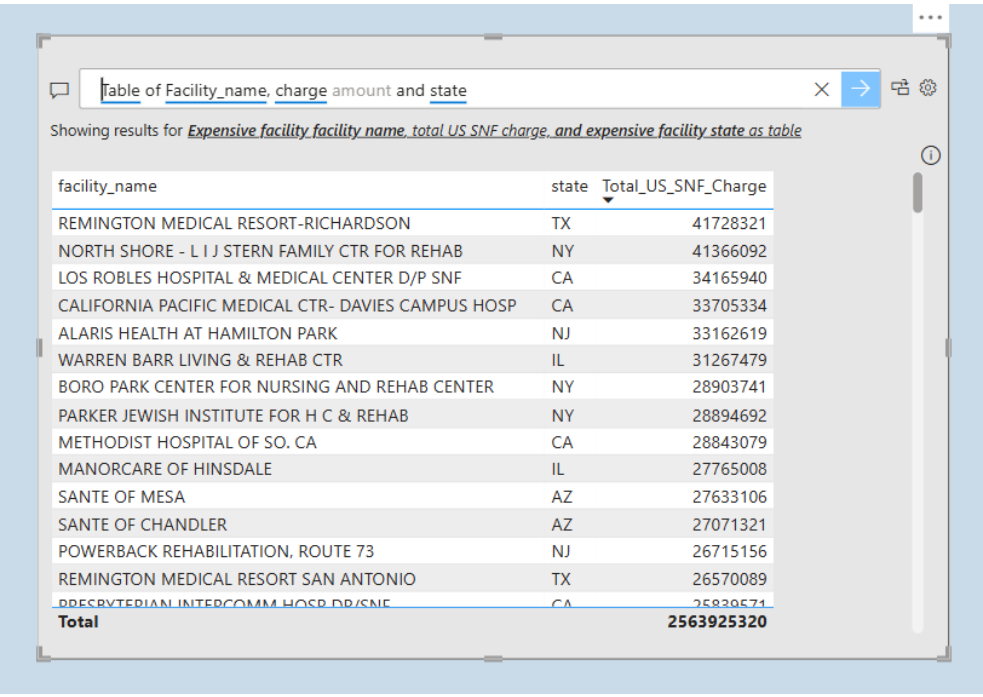


Figure 18: Facility charge with name visual

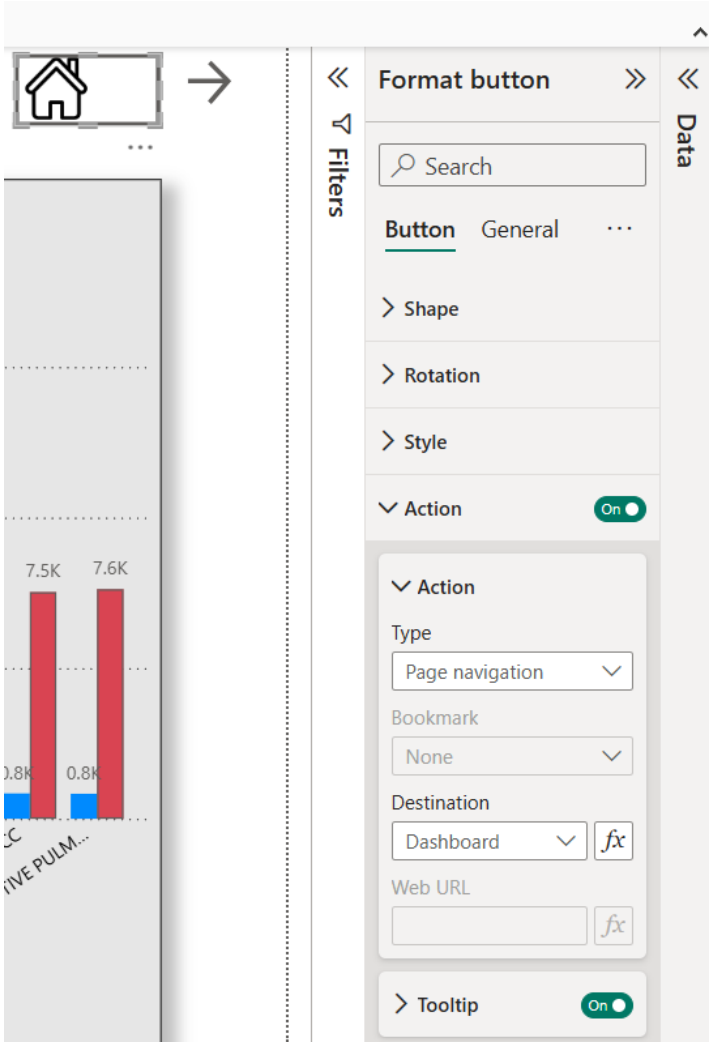


facility_name	state	Total_US_SNF_Charge
REMINGTON MEDICAL RESORT-RICHARDSON	TX	41728321
NORTH SHORE - L I J STERN FAMILY CTR FOR REHAB	NY	41366092
LOS ROBLES HOSPITAL & MEDICAL CENTER D/P SNF	CA	34165940
CALIFORNIA PACIFIC MEDICAL CTR- DAVIES CAMPUS HOSP	CA	33705334
ALARIS HEALTH AT HAMILTON PARK	NJ	33162619
WARREN BARR LIVING & REHAB CTR	IL	31267479
BORO PARK CENTER FOR NURSING AND REHAB CENTER	NY	28903741
PARKER JEWISH INSTITUTE FOR H C & REHAB	NY	28894692
METHODIST HOSPITAL OF SO. CA	CA	28843079
MANORCARE OF HINSDALE	IL	27765008
SANTE OF MESA	AZ	27633106
SANTE OF CHANDLER	AZ	27071321
POWERBACK REHABILITATION, ROUTE 73	NJ	26715156
REMINGTON MEDICAL RESORT SAN ANTONIO	TX	26570089
PRESBYTERIAN INTERCOMM HOSP DR/SNF	CA	25839571
Total		**2563925320**

Figure 19: Table of facilities amount with name and stat

Adding Buttons for page navigation

We add the buttons in all visual page for page navigation. We can easily go main dashboard, back visual page and front visual page using this button.



Finally, we created main dashboard for this project using a lot of buttons for page navigation. This main dashboard shows firstly the title of the project and next describe with two panel that Medicare Cost, Hospital Payment Amoun t, Discharge Volume and Hospital Facility Cosh in the left panel and Inpatient service Utilization, Outpatient service Utilization, Facilities Outlier and Ranking Hospital Provider in the right panel. We added Q&A exploration button at the end of main dashboard.

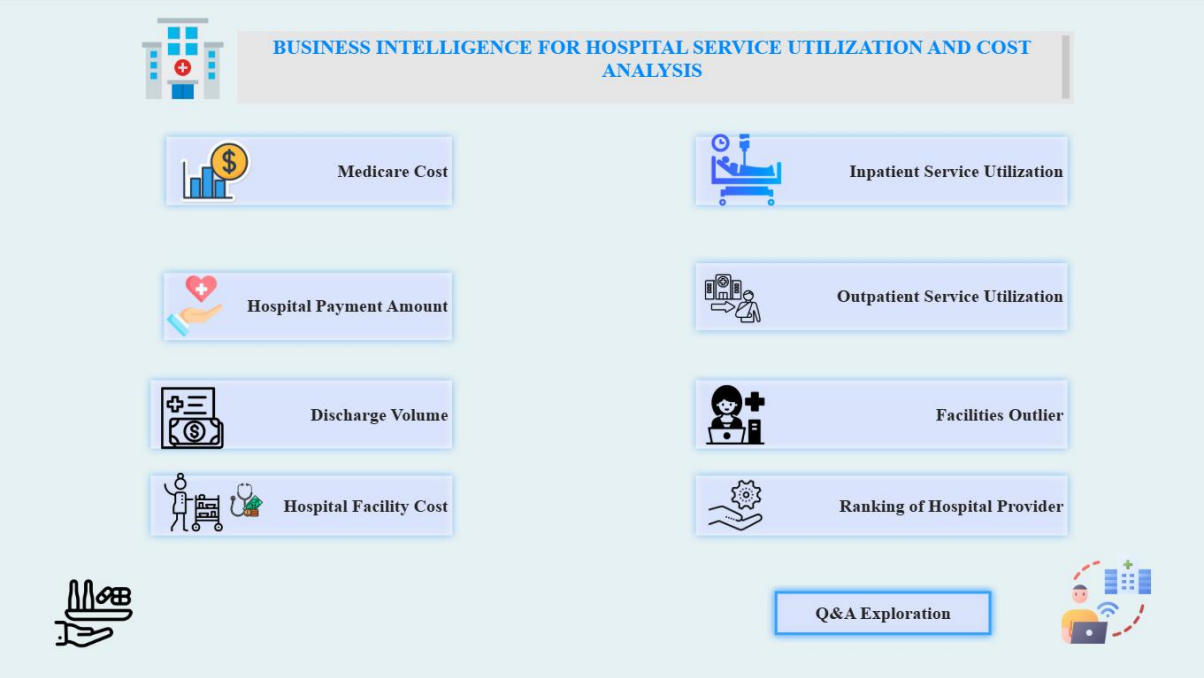


Figure 20: Screenshot of main dashboard

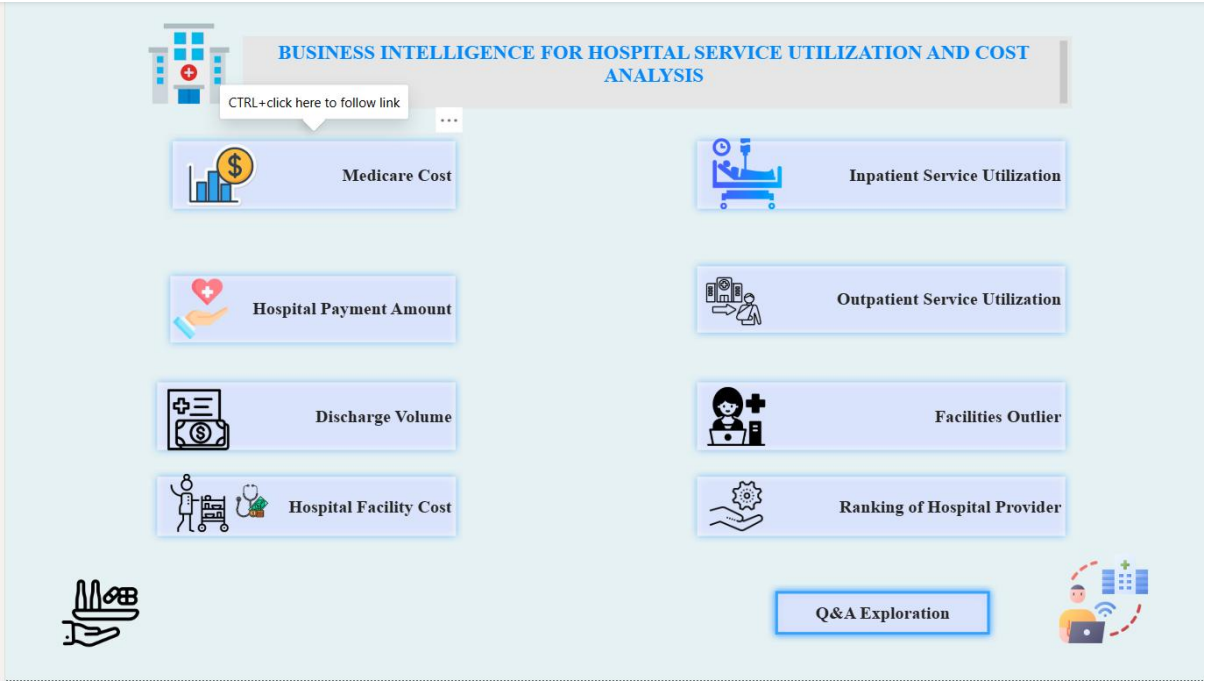


Figure 21: Screenshot of page navigation work

Publishing to Power BI

After we created dashboards, we can publish our dashboard with publish button from Home ribbon.

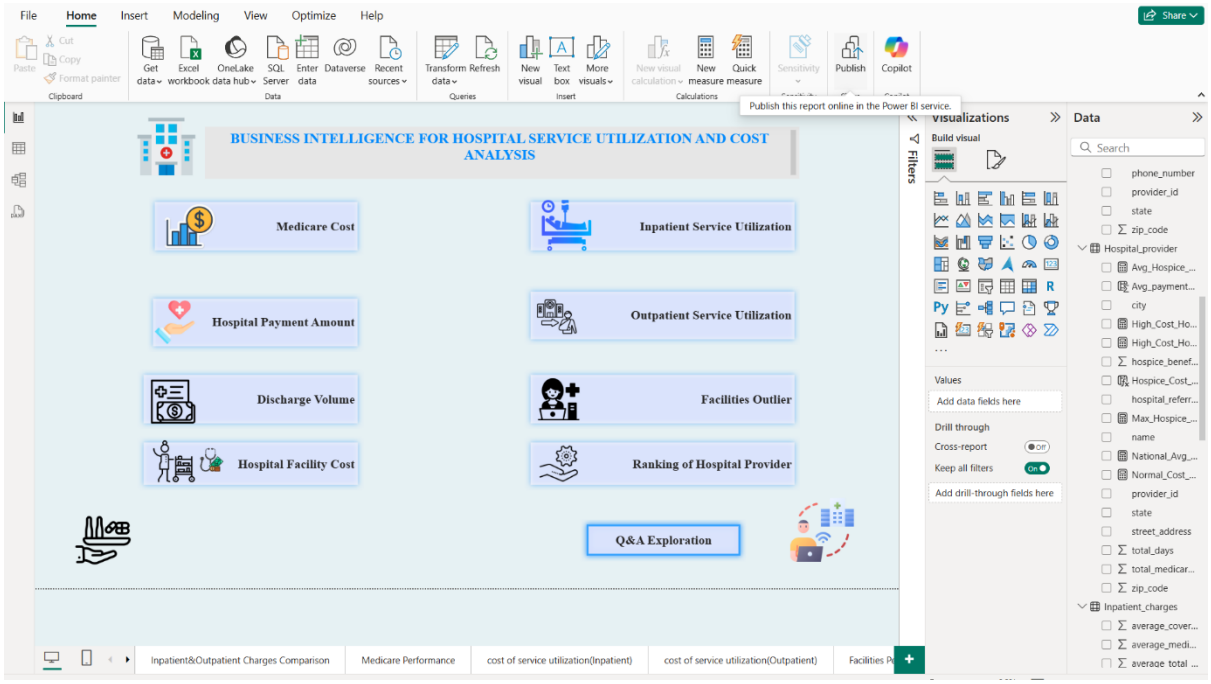


Figure 22: Publishing created dashboard

Our publishing succuess with E4448893_Khaing(BI-project).pbix in Prower BI.

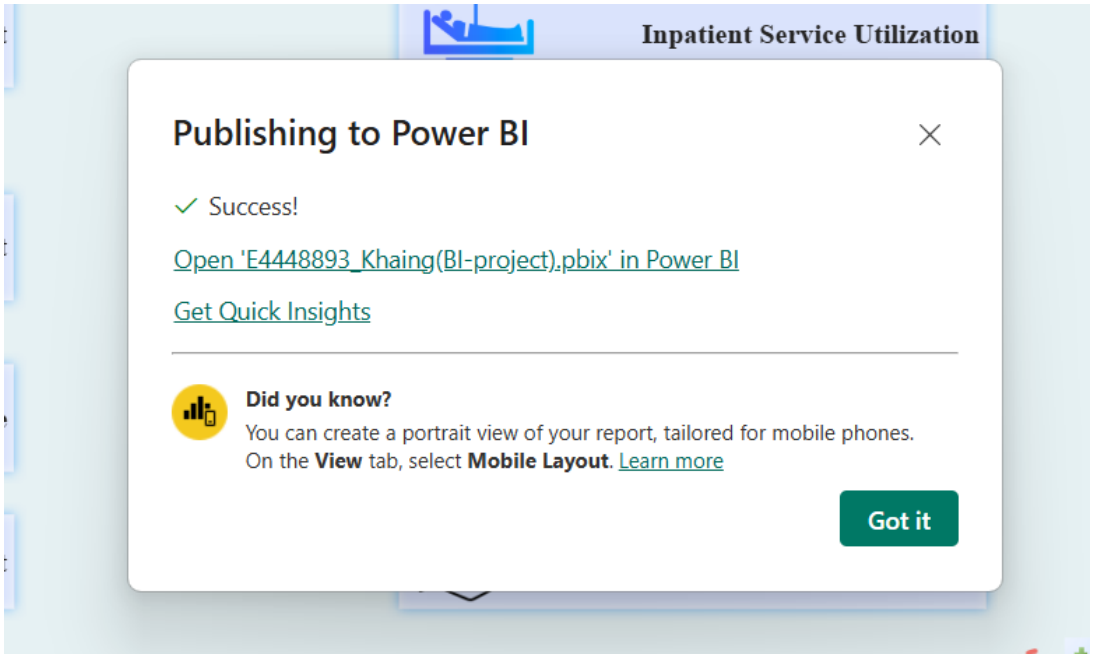


Figure 23: Publishing success

Power BI Report View

The screenshots below show the published BI report Dashboard.

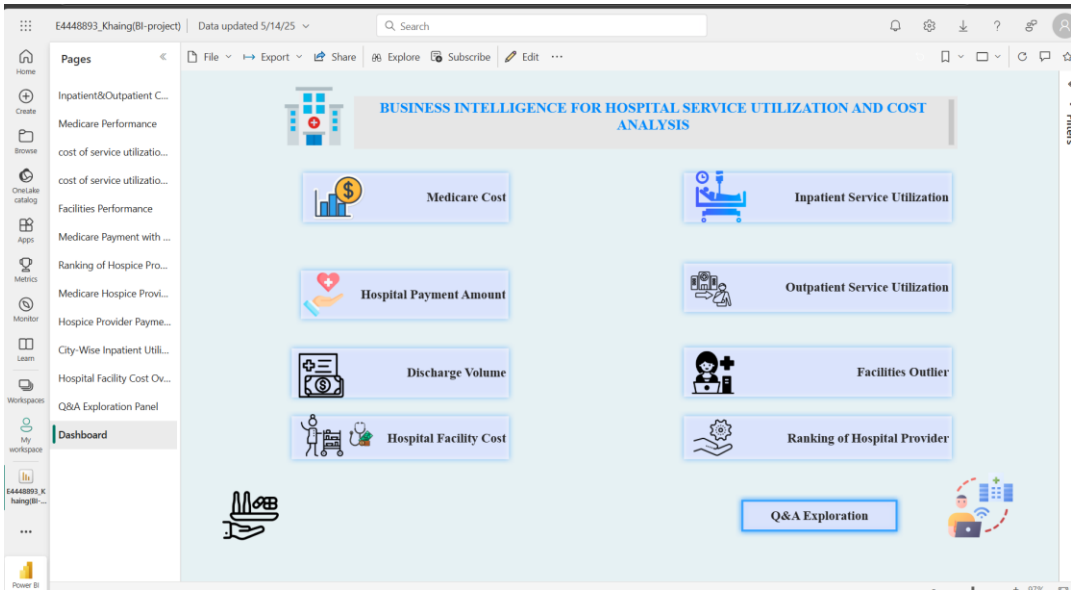


Figure 24: Screenshot of published power BI dashboard

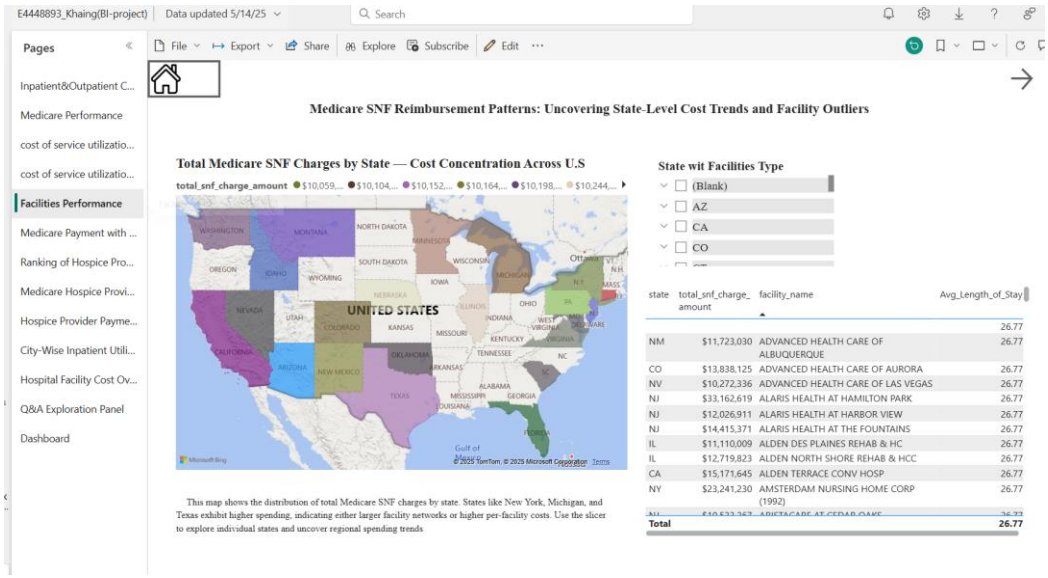


Figure 25: Published power BI report view for facilities performance

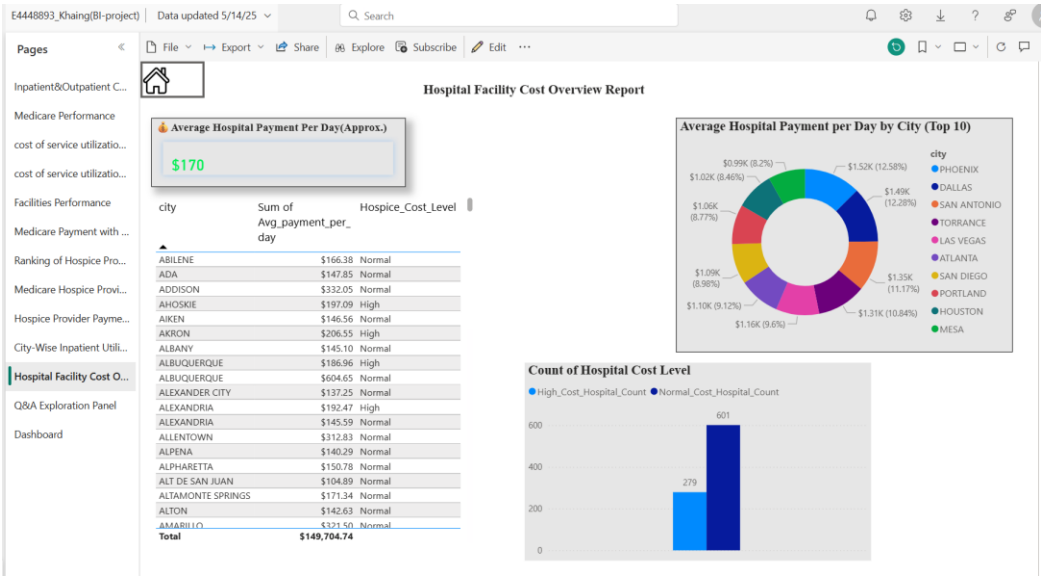


Figure 25: Published power BI report view for hospital facilities cost

Report Link: https://app.powerbi.com/groups/me/reports/13335f4f-d357-455a-86a6-380cef7b7e9d/8e23b03250b7c22c780a?experience=power-bi

5. Conclusion

The business intelligence report was presented to know the effective application of Power BI in analysing complex healthcare data and particularly focusing on Medicare inpatient and outpatient services across the United States. This visual delivers actionable insights into hospital performance, facility-level costs, discharge trends, and regional disparities in healthcare delivery. In order to manage and distribute their resources and services appropriately, hospital management places a high priority on the length of stay of patients and the total cost at the time of discharge. The length of stay and the overall cost at discharge are directly correlated, as this research demonstrates. These insights have direct implications for hospital resource planning and financial forecasting. DAX calculations, M language scripting, and natural language Q&A were utilized to create useful dynamic visual reports and an interactive dashboard.

Finally, the importance of business intelligence in healthcare analytics is emphasized in this research. It gives healthcare administrators, legislators, and analysts a data-driven basis on which to build better service delivery, increase operational efficiency, and make well-informed strategic choices.