

# Healthcare Provider Dashboard Analysis

## 🔍 Key Findings

### 1. Overall Financial Overview

- Total Billing Amount: £3M
- Average per Visit: £674.86
- Total Treatment Cost: £3M (Average £526.08)
- Medication Cost: £546K (Average £109.21)
- Room Charges: £180K (Average £14.63)
- Out-of-Pocket: £1M (Average £227.26)
- Insurance Coverage: £2M (Average £456.04)

## 🧠 Insight:

- ✓ **Insurance covers approximately 66.7% of total healthcare costs,**  
✗ while patients are responsible for around 33.3% out-of-pocket.

This suggests a relatively strong reliance on insurance, but the out-of-pocket expense still presents a significant financial burden for many patients.

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### 2. Billing by Procedure

#### Top 3 Procedures by Billing:

- X-Ray: £1,053,529 (31%)
- CT Scan: £805,508 (24%)
- MRI Scan: £600,739 (18%)

## 🧠 Insight:

- ✓ **Imaging procedures (X-Ray, CT, MRI) contribute a combined 73% of total procedural billing,**  
✗ highlighting them as the primary revenue drivers in healthcare services.

This insight may suggest a high demand or overreliance on diagnostic imaging, which could inform future investment, cost optimization, or policy review.

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### 3. Billing by Diagnosis & Service Type

- Asthma and Migraine have high emergency billing (29.71% and 27.51%).
- Fracture and Appendicitis have more inpatient cases.
- Hypertension has the highest outpatient billing (53.92%).

## 🧠 Insight:

 **High emergency billing for chronic conditions** such as **asthma** and **migraine** may indicate **gaps in ongoing outpatient care and preventive treatment plans**.

 **Hypertension's dominance in outpatient billing** suggests it is being managed effectively outside emergency settings.

These patterns can help identify areas for improving chronic disease management, reducing avoidable ER visits, and optimizing resource allocation.

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#### 4. Departmental Billing

- Cardiology: £846,925 (25.24%)
- Orthopedics: £813,253 (24.23%)
- General Surgery: £783,247 (23.34%)

 **Insight:**

 These three departments account for **approximately 73% of total billing**, with **Cardiology leading both in patient volume and total revenue**.

This highlights Cardiology as a key revenue driver, while Orthopedics and General Surgery also play major roles in the hospital's financial performance.

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#### 5. Geographic Analysis

- High billing: London, Birmingham, Dublin
- Lower billing: Glasgow and nearby areas

 **Insight:**

 **Billing amounts vary significantly by region.**

The top-performing cities likely benefit from:

- Larger population densities
- More advanced or better-equipped healthcare facilities

This suggests opportunities for targeted resource allocation and potential growth in lower-performing areas through infrastructure improvements or outreach programs.

# Documentation

## Table-Level Logic & Date Intelligence

### DateTable

Creates a calendar table with added columns for year, month, quarter, etc.

**Description:** Creates a full date table using CALENDARAUTO() and enriches it with common time intelligence fields such as year, month, quarter, weekday names, and a classification for weekends vs. weekdays. This table is essential for enabling proper date-based filtering, grouping, and time intelligence calculations in your dashboard.

```
DateTable = ADDCOLUMNS(
    CALENDARAUTO(),
    "Year", YEAR([Date]),
    "Month", FORMAT([Date], "mmm"),
    "MonthNum", MONTH([Date]),
    "Weekday", FORMAT([Date], "ddd"),
    "WeekdayNum", WEEKDAY([Date]),
    "Qtr", "Q-" & FORMAT([Date], "Q"),
    "DayType", IF(WEEKDAY([Date]) = 1 || WEEKDAY([Date]) = 7, "Weekend", "Weekday")
)
```

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### Length of Stay

Calculates the number of days between admission and discharge.

**Description:** A calculated column in the visits table that determines the number of days a patient stayed in the hospital by calculating the difference between the admission date and discharge date.

*Length of Stay = DATEDIFF(visits[Admitted Date], visits[Discharge Date], DAY)*

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## Basic Measures

### Total Insurance Coverage

Sums all insurance coverage amounts from visits.

**Description:** Calculates the total amount of insurance coverage applied to patient visits by summing the Insurance Coverage column in the visits table.

*Total Insurance Coverage = SUM(visits[Insurance Coverage])*

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### Total Medication Cost

Sums all medication costs from visits.

**Description:** Calculates the total cost of medications prescribed during visits by summing the Medication Cost column.

*Total Medication cost = SUM(visits[Medication Cost])*

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## Total Patient

Counts distinct patients based on Patient ID.

**Description:** Counts the number of unique patients who had visits. This is done by counting distinct Patient ID values.

$$\text{Total Patient} = \text{DISTINCTCOUNT}(\text{visits}[Patient ID])$$

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## Total Room Charges

Calculates total room charges using daily rate and length of stay.

**Description:** Computes the total cost of room charges based on the daily rate and length of stay for each visit. Uses SUMX to calculate row-by-row multiplication.

$$\text{Total Room Charges} = \text{SUMX}(\text{visits}, \text{visits}[Room Charges(daily rate)] * \text{visits}[Length of Stay])$$

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## Total Treatment Cost

Sums all treatment costs.

**Description:** Calculates the total cost of treatments during all patient visits

$$\text{Total Treatment Cost} = \text{SUM}(\text{visits}[Treatment Cost])$$

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## Total Billing Amount

Sum of Medication, Treatment, and Room Charges.

**Description:** Sums up all billing components including medication, treatment, and room charges to get the total billed amount before insurance.

$$\text{Total Billing Amount} = [\text{Total Medication cost}] + [\text{Total Treatment Cost}] + [\text{Total Room Charges}]$$

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## Out-of-Pocket

Billing amount not covered by insurance.

**Description:** Calculates the amount patients must pay themselves by subtracting insurance coverage from the total billing amount.

$$\text{Out-of-Pocket} = [\text{Total Billing Amount}] - [\text{Total Insurance Coverage}]$$

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## Average Measures & Patient-Level Insights

### Average Billing Amount per Visit

Average billing per patient.

**Description:** Calculates the average total billing amount per patient by dividing the overall billing amount by the number of unique patients.

$$\text{Average Billing Amount per visits} = \text{DIVIDE}([\text{Total Billing Amount}], [\text{Total Patient}])$$

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### Average Insurance Coverage

Average value of insurance coverage.

**Description:** Returns the average value of insurance coverage across all visits.

*Average Insurance Coverage = AVERAGE(visits[Insurance Coverage])*

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### Average Length of Stay

Average stay duration in days.

**Description:** Computes the average number of days patients stayed in the hospital.

*Average Length of Stay = AVERAGE(visits[Length of Stay])*

---

### Average Medication Cost

Average cost of medications.

**Description:** Returns the average cost of medication per visit.

*Average Medication cost = AVERAGE(visits[Medication Cost])*

---

### Average Out-of-pocket

Average out-of-pocket cost per patient.

**Description:** Calculates the average out-of-pocket cost per patient by dividing the total out-of-pocket amount by the number of patients.

*Average Out-of-pocket = DIVIDE([Out-of-Pocket], [Total Patient])*

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### Average Patient Satisfaction Score

Average patient satisfaction rating.

**Description:** Computes the average satisfaction score as reported by patients during or after their visits.

*Average Patient Satisfaction Score = AVERAGE(visits[Patient Satisfaction Score])*

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### Average Room Charges

Average daily room charge.

**Description:** Calculates the average daily room charge from the visits data.

*Average Room Charges = AVERAGE(visits[Room Charges(daily rate)])*

---

### Average Treatment Cost

Average cost of treatment.

**Description:** Returns the average cost of treatment provided during visits.

*Average Treatment Cost = AVERAGE(visits[Treatment Cost])*

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## Contribution Percentage Measures

### Department %

Percentage of total billing amount per department.

**Description:** Calculates each department's contribution to the overall billing amount. This is done by dividing the billing amount for the current department by the total billing amount across all departments.

```
Department % = DIVIDE(  
    [Total Billing Amount],  
    CALCULATE([Total Billing Amount], ALL(departments[Department]))  
)
```

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### Procedures %

Percentage of total billing amount per procedure.

**Description:** Calculates each procedure's contribution to the total billing amount by dividing the billing for a specific procedure by the total billing amount across all procedures.

```
procedures % = DIVIDE(  
    [Total Billing Amount],  
    CALCULATE([Total Billing Amount], ALL(procedures[Procedure]))  
)
```

---

## Context & Helper Measures

### Blank

A placeholder measure that returns zero.

**Description:** A helper measure returning zero. Often used to avoid errors, fill gaps in visuals, or as a placeholder.

```
Blank = 0
```

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### Active Department

Returns the currently selected department.

**Description:** Returns the currently selected department from the departments table. Useful for dynamic titles, KPIs, and contextual text in your visuals.

```
Active Department = SELECTEDVALUE(departments[Department])
```

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Structure		Manage relationships	New measure	Quick measure	New column	New table	Mark as date table	Calendars
X	✓							
1	DateTable =							
2	ADDCOLUMNS(							
3	CALENDARAUTO(),							
4	"Year" , YEAR([Date]) ,							
5	"Month" , FORMAT([Date], "mmm") ,							
6	"MonthNum" , MONTH([Date]) ,							
7	"Weekday" , FORMAT( [Date], "ddd" ),							
8	"WeekdayNum" , WEEKDAY([Date]),							
9	"Qtr" , "Q-" & FORMAT([Date],"Q"),							
10	"DayType" ,							
11	IF(WEEKDAY([Date]) = 1    WEEKDAY([Date]) = 7 , "Weekend" , "Weekday")							
12	)							
13								
Date	Year	Month	MonthNum	Weekday	WeekdayNum	Qtr	DayType	
1/1/2024	2024	Jan	1	Mon	2	Q-1	Weekday	
1/8/2024	2024	Jan	1	Mon	2	Q-1	Weekday	
1/15/2024	2024	Jan	1	Mon	2	Q-1	Weekday	
1/22/2024	2024	Jan	1	Mon	2	Q-1	Weekday	
1/29/2024	2024	Jan	1	Mon	2	Q-1	Weekday	
2/5/2024	2024	Feb	2	Mon	2	Q-1	Weekday	
2/12/2024	2024	Feb	2	Mon	2	Q-1	Weekday	
2/19/2024	2024	Feb	2	Mon	2	Q-1	Weekday	
2/26/2024	2024	Feb	2	Mon	2	Q-1	Weekday	
3/4/2024	2024	Mar	3	Mon	2	Q-1	Weekday	
3/11/2024	2024	Mar	3	Mon	2	Q-1	Weekday	
3/18/2024	2024	Mar	3	Mon	2	Q-1	Weekday	
3/25/2024	2024	Mar	3	Mon	2	Q-1	Weekday	
4/1/2024	2024	Apr	4	Mon	2	Q-2	Weekday	
4/8/2024	2024	Apr	4	Mon	2	Q-2	Weekday	
4/15/2024	2024	Apr	4	Mon	2	Q-2	Weekday	
4/22/2024	2024	Apr	4	Mon	2	Q-2	Weekday	
4/29/2024	2024	Apr	4	Mon	2	Q-2	Weekday	
5/6/2024	2024	May	5	Mon	2	Q-2	Weekday	
5/13/2024	2024	May	5	Mon	2	Q-2	Weekday	
5/20/2024	2024	May	5	Mon	2	Q-2	Weekday	
5/27/2024	2024	May	5	Mon	2	Q-2	Weekday	
6/3/2024	2024	Jun	6	Mon	2	Q-2	Weekday	
6/10/2024	2024	Jun	6	Mon	2	Q-2	Weekday	
6/17/2024	2024	Jun	6	Mon	2	Q-2	Weekday	
6/24/2024	2024	Jun	6	Mon	2	Q-2	Weekday	
7/1/2024	2024	Jul	7	Mon	2	Q-3	Weekday	
7/8/2024	2024	Jul	7	Mon	2	Q-3	Weekday	
7/15/2024	2024	Jul	7	Mon	2	Q-3	Weekday	
7/22/2024	2024	Jul	7	Mon	2	Q-3	Weekday	
7/29/2024	2024	Jul	7	Mon	2	Q-3	Weekday	
8/5/2024	2024	Aug	8	Mon	2	Q-3	Weekday	
8/12/2024	2024	Aug	8	Mon	2	Q-3	Weekday	
8/19/2024	2024	Aug	8	Mon	2	Q-3	Weekday	
8/26/2024	2024	Aug	8	Mon	2	Q-3	Weekday	
9/2/2024	2024	Sep	9	Mon	2	Q-3	Weekday	
9/9/2024	2024	Sep	9	Mon	2	Q-3	Weekday	
9/16/2024	2024	Sep	9	Mon	2	Q-3	Weekday	
9/23/2024	2024	Sep	9	Mon	2	Q-3	Weekday	
9/30/2024	2024	Sep	9	Mon	2	Q-3	Weekday	
10/7/2024	2024	Oct	10	Mon	2	Q-4	Weekday	
10/14/2024	2024	Oct	10	Mon	2	Q-4	Weekday	
10/21/2024	2024	Oct	10	Mon	2	Q-4	Weekday	
10/28/2024	2024	Oct	10	Mon	2	Q-4	Weekday	
11/4/2024	2024	Nov	11	Mon	2	Q-4	Weekday	

 Search

▼  Dax (2)

 Active Department

▼  Average Measures

 Average Billing Amount per visits

 Average Insurance Coverage

 Average Length of Stay

 Average Medication cost

 Average Out-of-pocket

 Average Patient Satisfaction Score

 Average Room Charges

 Average Treatment Cost

 Balnk

▼  Basic Measure

 Out-of-Pocket

 Total Billing Amount

 Total Insurance Coverage

 Total Medication cost

 Total Patient

 Total Room Charges

 Total Treatment Cost

 Department %

 procedures %

