

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.

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.

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.

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.

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.

Key Findings from Billing Dashboard

1. Year-over-Year Billing Drop

- 2024 billing: £2.0M
- 2025 billing: £1.4M
- Change: -29.6%

Insight:

There has been a **significant 29.6% drop in total billing** from 2024 to 2025. This decline may indicate:

- A **reduction in service volume** (fewer projects, clients, or transactions),
- A **drop in efficiency** (lower billing per project),
- Or other operational or market-related challenges.

Why It Matters:

This trend highlights the **need for immediate analysis** to identify root causes and develop corrective actions. Declining billing can impact cash flow, profitability, and long-term sustainability if not addressed promptly.

2. Weekday vs. Weekend Billing

- Weekday billing dropped 29% (from £1.4M to £999.6K)
- Weekend billing dropped **31.2%** (from £562.3K to £386.6K)

Insight:

Billing decreased across **both weekdays and weekends**, with **weekend billing experiencing a steeper decline**. This could be driven by:

- Reduced staffing on weekends
- Limited service availability
- Lower patient or client **volume**

Why It Matters:

The sharper decline in weekend billing suggests an opportunity to review **resource allocation** and **service availability** strategies. Optimizing weekend operations could help recover lost revenue and improve overall performance.

3. Departmental Decline

Each department shows a **significant billing decrease across quarters**:

- Orthopedics: -57.8%
- Pediatrics: -67.8%
- General Surgery: -51.5%
- **Cardiology: -78.9%**

- **Neurology: -40.5%**

Insight:

Every department experienced a **significant decline in billing**, with **Cardiology and Pediatrics hit the hardest**. Possible reasons may include:

- Reallocation of staff or resources
- Temporary reduction or suspension of services
- Lower patient **intake or fewer procedures performed**

Why It Matters:

Such steep drops—especially in critical departments—warrant an in-depth review. Understanding the **underlying causes** is essential for **targeted recovery efforts, resource optimization, and maintaining quality of care**.

4. **Monthly Billing Fluctuations**

- Biggest monthly jump: Jan 2025, billing rose by £663.9K (+352.7%)
- Significant drops: Feb to Oct showed consistent declines, especially in **Oct (-£174.2K)**

Insight:

January's spike may reflect a **post-holiday backlog** or **rescheduled procedures** from December. However, the **overall trend for the year remains negative**, signaling weaker performance or demand in later months.

Why It Matters:

The **unsustainable surge in January**, followed by prolonged underperformance, points to **seasonal imbalances** and potential issues in **scheduling, demand forecasting, or resource management**.

5. **Weekday Billing Patterns**

- Wednesday showed the highest growth: +28.7% (up £117.1K)
- Sunday had the largest drop: -18.5% (down £96.7K)
- Weekends (Sat/Sun) perform the weakest overall

Insight:

Weekday billing is generally **more stable and efficient**, while **weekend billing—especially Sundays—underperforms**. This may be due to:

- **Reduced staffing or service offerings**
- **Lower patient demand** on weekends

Why It Matters:

The contrast between weekdays and weekends suggests an opportunity to **optimize scheduling, increase service availability, or promote weekend services** to balance capacity and revenue.

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")
)
```

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)
```

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])
```

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])

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.

Total Patient = DISTINCTCOUNT(visits[Patient ID])

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.

Total Room Charges = SUMX(visits, visits[Room Charges(daily rate)] * visits[Length of Stay])

Total Treatment Cost

Sums all treatment costs.

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

Total Treatment Cost = SUM(visits[Treatment Cost])

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.

Total Billing Amount = [Total Medication cost] + [Total Treatment Cost] + [Total Room Charges]

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.

Out-of-Pocket = [Total Billing Amount] - [Total Insurance Coverage]

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.

Average Billing Amount per visits = DIVIDE([Total Billing Amount], [Total Patient])

Average Insurance Coverage

Average value of insurance coverage.

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

$$\text{Average Insurance Coverage} = \text{AVERAGE}(\text{visits}[Insurance\ Coverage])$$

Average Length of Stay

Average stay duration in days.

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

$$\text{Average Length of Stay} = \text{AVERAGE}(\text{visits}[Length\ of\ Stay])$$

Average Medication Cost

Average cost of medications.

Description: Returns the average cost of medication per visit.

$$\text{Average Medication cost} = \text{AVERAGE}(\text{visits}[Medication\ Cost])$$

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.

$$\text{Average Out-of-pocket} = \text{DIVIDE}([\text{Out-of-Pocket}], [\text{Total Patient}])$$

Average Patient Satisfaction Score

Average patient satisfaction rating.

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

$$\text{Average Patient Satisfaction Score} = \text{AVERAGE}(\text{visits}[Patient\ Satisfaction\ Score])$$

Average Room Charges

Average daily room charge.

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

$$\text{Average Room Charges} = \text{AVERAGE}(\text{visits}[Room\ Charges(daily\ rate)])$$

Average Treatment Cost

Average cost of treatment.

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

$$\text{Average Treatment Cost} = \text{AVERAGE}(\text{visits}[Treatment\ Cost])$$

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]))  
)
```

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
```

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])
```

Previous Month Billing Amount

Previous Month Billing Amount

Calculates the total billing amount from the previous month.

Description: Returns the total billing amount for the month immediately preceding the current date context. Useful for month-over-month comparisons.

DAX:

```
Previous Month Billing Amount =
  CALCULATE(
    [Total Billing Amount],
    DATEADD(DateTable[Date], -1, MONTH)
  )
```

Previous Weekday Billing Amount

Previous Weekday Billing Amount

Calculates the billing amount for the previous weekday.

Description: Returns the total billing amount for the weekday that directly precedes the currently selected weekday, regardless of the current filter context. Useful for day-over-day weekday comparisons.

DAX:

```
PreviousWeekday =
  VAR _CurrentWeekday = SELECTEDVALUE(DateTable[Weekday])
  VAR _PreviousWeekday = SWITCH(
    _CurrentWeekday,
    "Mon", "Sun",
    "Tue", "Mon",
    "Wed", "Tue",
    "Thu", "Wed",
    "Fri", "Thu",
    "Sat", "Fri",
    "Sun", "Sat"
  )
RETURN
  CALCULATE(
    [Total Billing Amount],
    DateTable[Weekday] = _PreviousWeekday,
    ALL(DateTable)
  )
```
