



HOSPITAL EMERGENCY ROOM DASHBOARD

MONTHLY VIEW

Apr 2023

Month & Year

All

Patient Count

9216



Avg Wait Time

35.3 Min



Patient Rating

4.99



Patients Referred

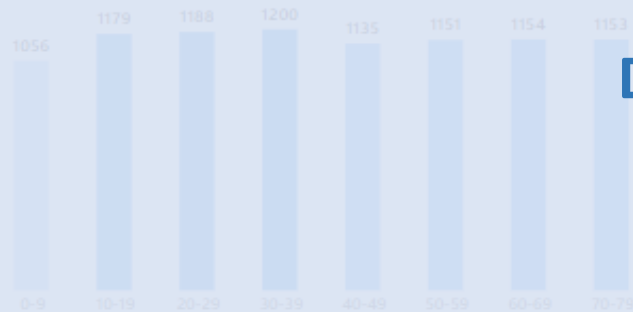
3816



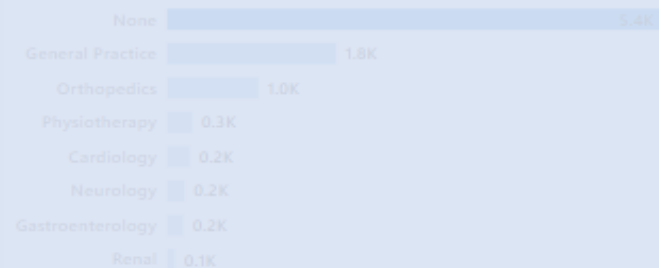
HOSPITAL EMERGENCY DASHBOARD

Descriptive Analysis

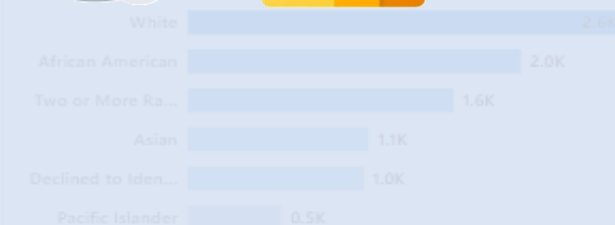
Patients by Age Group



Patients by Department Referral



Patient Ethnicity



Patient by Day & Hour

Hours	Mon	Tue	Wed	Thu	Fri	Sat	Sun
00-02	114	107	102	106	113	118	118
03-04	111	107	104	100	113	128	98
05-06	125	122	104	104	98	114	110
07-08	84	123	111	124	127	102	119
09-10	116	112	107	113	102	124	100
11-12	107	106	98	111	122	109	99
13-14	115	107	117	105	107	123	102
15-16	99	94	117	111	102	110	129
17-18	104	116	102	121	98	99	97
19-20	123	84	94	105	124	113	110
21-22	110	107	117	105	110	110	121
23-24	106	123	113	116	111	115	115

Monthly View

Consolidated View

Patient Details

Insights



Developed By

Khaja Umairuddin

Detail Oriented Data Analyst

Developed By : Khaja Umairuddin



Power BI

OBJECTIVE

- To analyze and visualize hospital emergency room operations using Oracle SQL and Power BI, providing insights into monthly trends, patient flow, and key performance metrics to enhance efficiency, optimize resource allocation, and improve patient care through data-driven recommendations.

TOOLS USED

- **Oracle SQL** – For data extraction, transformation, and advanced querying.
- **Power BI** – For interactive data visualization and dashboard creation.

HOSPITAL EMERGENCY ROOM DASHBOARD

STEPS IN PROJECT

- ✓ Requirement Gathering/ Business Requirements
- ✓ Data Walkthrough
- ✓ Data Connection Using Oracle SQL
- ✓ Data Cleaning / Quality Check
- ✓ Data Modeling
- ✓ Data Processing Use SQL queries to calculate key metrics
- ✓ DAX Calculations
- ✓ Dashboard Lay outing
- ✓ Charts Development and Formatting
- ✓ Dashboard / Report Development
- ✓ Insights Generation

HOSPITAL EMERGENCY ROOM DASHBOARD

DASHBOARDS - 4

1. Monthly View

2. Consolidated View

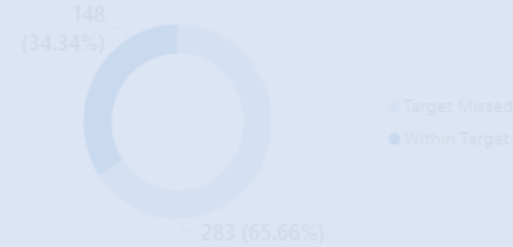
3. Patient Details

4. Key Takeaways

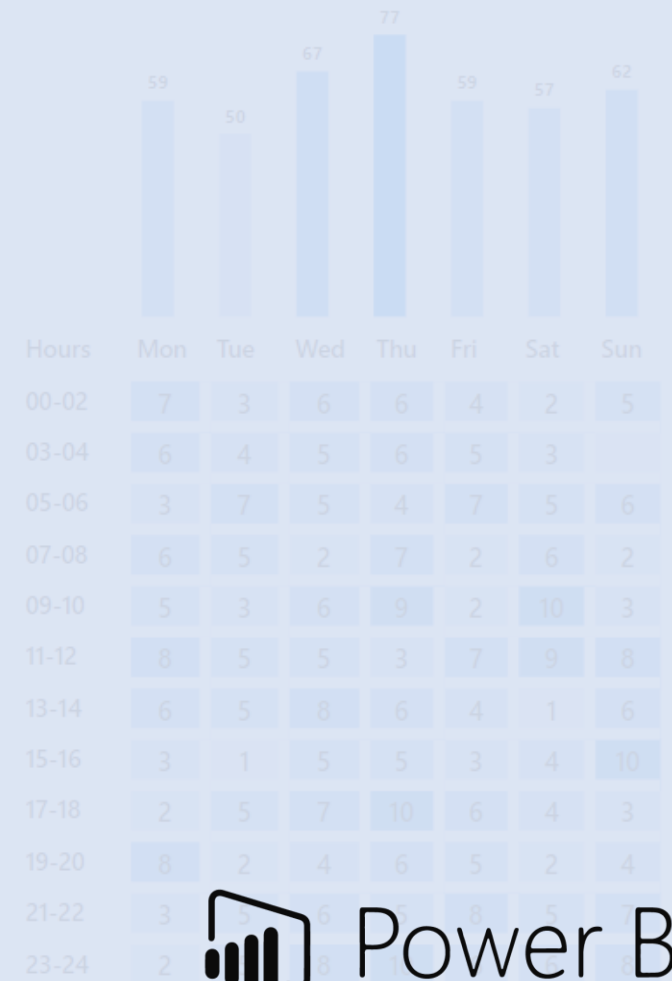
Patient Admission Status



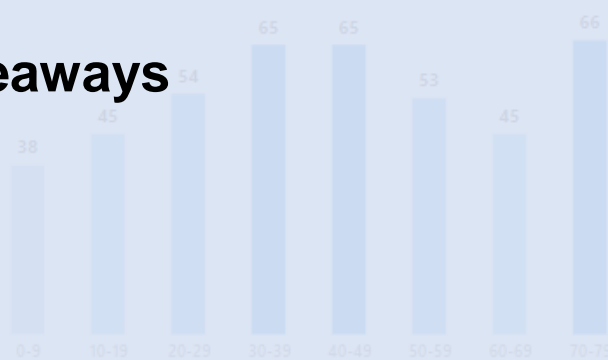
% of Patients Seen Within 30 Mins



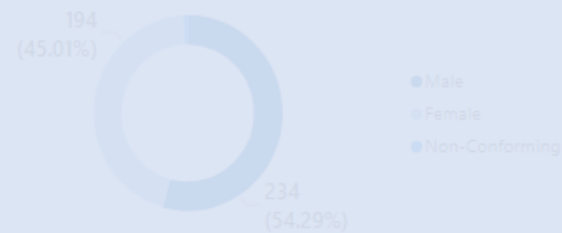
No of Patients by Day & Hour



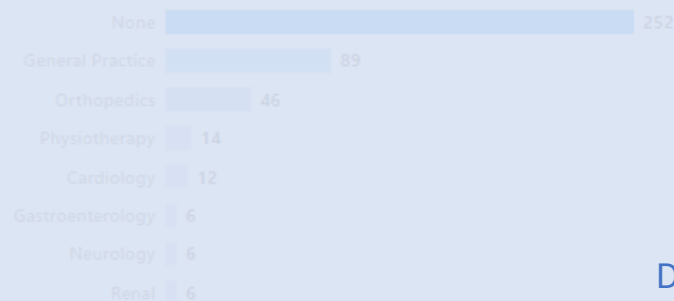
Age Group



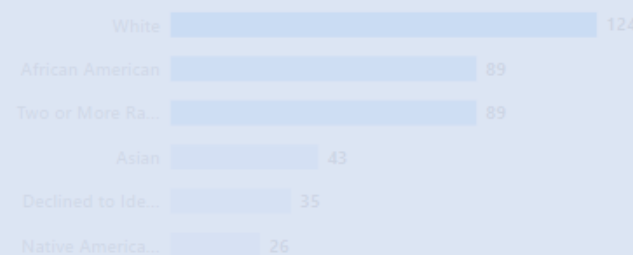
No of Patients by Gender



No of Patients by Department Referral



No of Patients by Patient Race



BUSINESS REQUIREMENTS

KPI's Requirements

To enhance operational efficiency and provide actionable insights into emergency room performance, we need to create a Hospital Emergency Room Analysis Dashboard in Power BI. This solution will enable stakeholders to track, analyze, and make data-driven decisions regarding patient management and service optimization.

➤ Number of Patients:

Measure the total number of patients visiting the ER daily.

Display a daily trend using an area sparkline to understand patterns over time, such as peak days or seasonal trends.

➤ Average Wait Time:

Calculate the average time patients wait before being attended to by a medical professional.

Use an area sparkline to show daily fluctuations and identify days with higher wait times that may require operational adjustments.

➤ Patient Satisfaction Score:

Analyze the average satisfaction score of patients on a daily basis to evaluate the quality of service provided.

Present a daily trend using an area sparkline to identify dips in satisfaction and correlate them with operational challenges or peak times.

➤ Number of Patients Referred:

Count the number of patients referred to specific departments from the ER each day.

Use an area sparkline to track daily trends and identify departments with high referral rates, which may require additional resources.



HOSPITAL EMERGENCY ROOM DASHBOARD

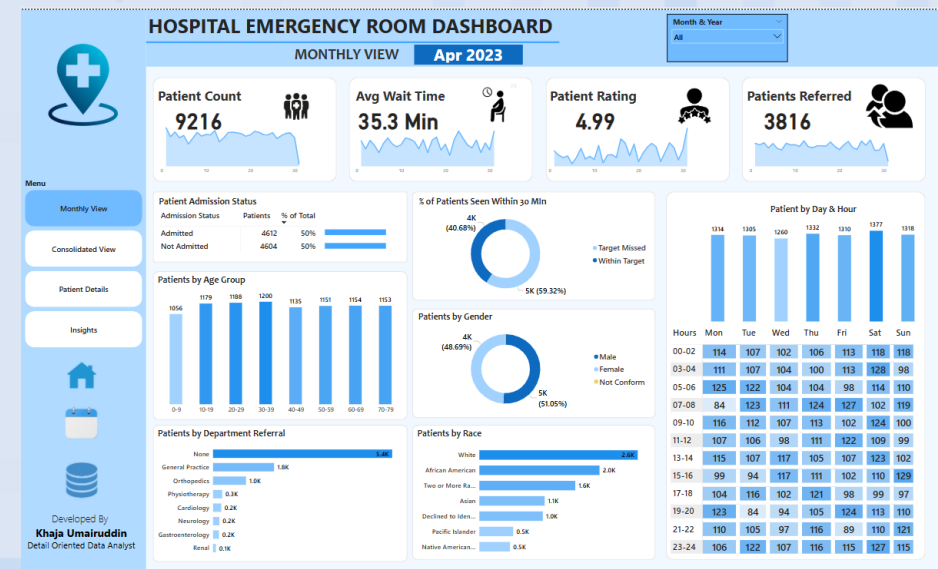
BUSINESS REQUIREMENTS

Dashboard 1: Monthly View

Objective: Monitor key metrics and trends on a month-by-month basis to identify patterns and areas for improvement.

Charts to Develop:

- Patient Admission Status: Track admitted vs. non-admitted patients.
- Patient Age Distribution: Group patients by 10-year age intervals.
- Department Referrals: Analyze referral trends across different departments.
- Timeliness: Measure the percentage of patients seen within 30 minutes.
- Gender Analysis: Visualize patient distribution by gender.
- Racial Demographics: Analyze patient data by race.
- Time Analysis: Assess patient volume by day and hour.





HOSPITAL EMERGENCY ROOM DASHBOARD

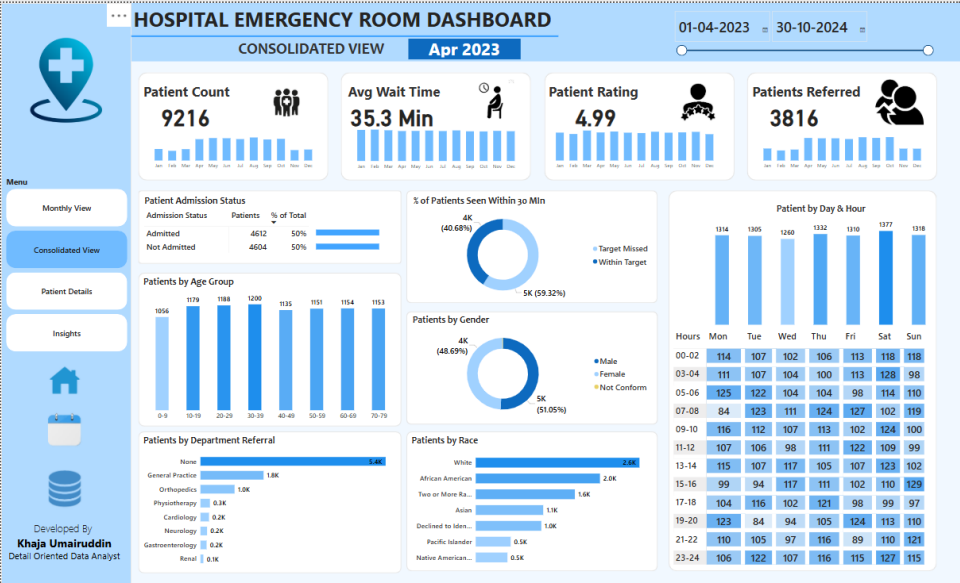
BUSINESS REQUIREMENTS

Dashboard 2: Consolidated View

Objective: Provide a holistic summary of hospital performance for a selected date range.

Charts to Develop:

- Similar metrics as the Monthly View, but aggregated over a customizable date range for broader insights and trend analysis



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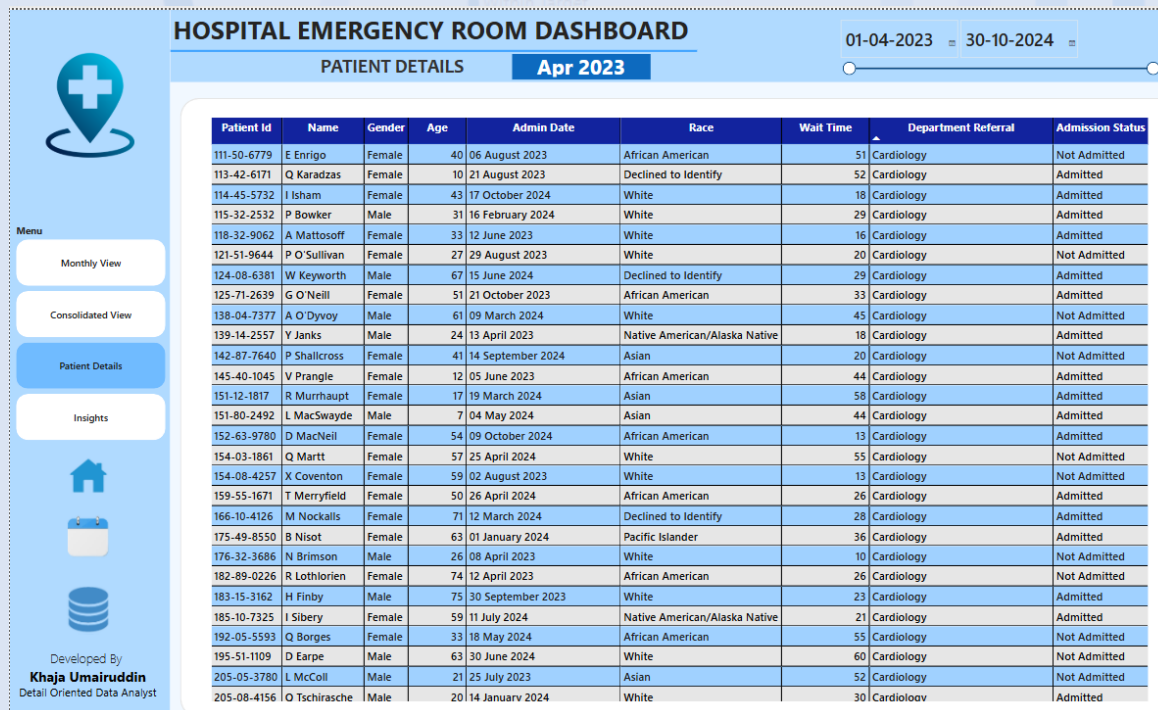




Dashboard 3: Patient Details

Charts to Develop: A grid displaying essential fields:

- Patient ID
- Patient Full Name
- Gender
- Age
- Admission Date
- Patient Race
- Wait Time
- Department Referral
- Admission Status



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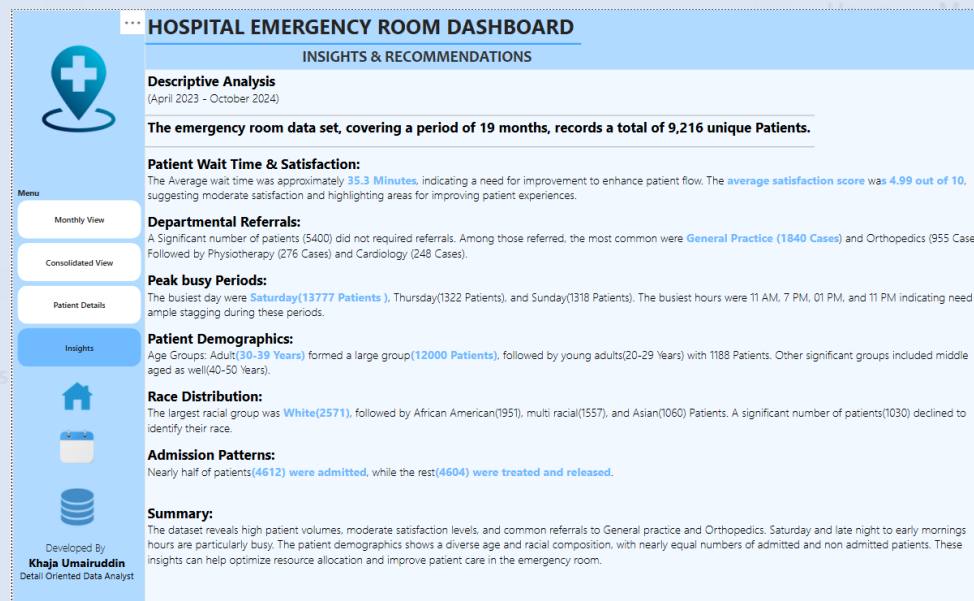
BUSINESS REQUIREMENTS

Dashboard 4: Insights and Recommendations

Objective: Summarize the findings from all dashboards to provide clear and actionable insights for stakeholders.

Charts to Develop:

- Descriptive analysis of each metric and visualization, including patterns, anomalies, and actionable recommendations to optimize emergency room operations and patient care.



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HOSPITAL EMERGENCY ROOM DASHBOARD

ORACLE SQL QUERIES

-- Patients Count

```
SELECT COUNT(DISTINCT Patient_id) AS Patient_Count  
FROM patient_info;
```

-- Avg Wait Time

```
SELECT TO_CHAR(ROUND (AVG(Patient_WaitTime),1),'999.9') || 'Min' AS Avg_WaitTime  
FROM Patient_info;
```

-- Patient Rating

```
SELECT ROUND(AVG(Patient_Satisfaction_Score),2) AS Patient_Rating  
FROM patient_info;
```

-- Patients Reffered

```
SELECT COUNT(*) AS Patients_Referred  
FROM Patient_info  
WHERE Department_Referral <> 'None';
```

-- Patient_Admission_Status

```
SELECT  
    Admission_Status,  
    COUNT(DISTINCT Patient_id) AS Patients,  
    ROUND((COUNT(*) *100.0 / (SELECT COUNT (*) FROM Patient_info)),0) || '%AS "%_of_Total"  
FROM patient_info  
GROUP BY Admission_Status;
```

-- Patients by Age group

```
SELECT  
    AGE_Group,  
    COUNT(DISTINCT Patient_id) AS Patients  
FROM patient_info  
GROUP BY Age_Group  
ORDER BY Age_Group;
```

-- Patient by Department Referral

```
SELECT  
    Department_Referral,  
    COUNT(DISTINCT Patient_id) AS Patients  
FROM Patient_Info  
GROUP BY Department_Referral  
ORDER BY Patients DESC;
```

-- Patient by Race

```
SELECT  
    Patient_Race,  
    COUNT(DISTINCT Patient_id) AS Patients  
FROM Patient_info  
GROUP BY Patient_Race  
ORDER BY patients DESC;
```