Hospital Emergency Room Patient Report

🖥 Tools Used	Measures Microsoft Power BI
🔗 URL	https://app.powerbi.com/view? r=eyJrIjoiYjJmNTAxNDMtZTEzZS00MjAwLWFIZTEtNWQ2YjIiNGRhMmNjIiwidCI6IjExMTNiZTM0LWFIZDEtNGQv

Introduction

In Mercy General Hospital's Emergency Room, there's a pressing issue of prolonged patient wait times, affecting overall efficiency and patient satisfaction. The current Power BI dashboard highlights bottlenecks, but improvements are needed to streamline processes, optimize resource allocation, and enhance the overall ER experience for patients seeking urgent medical attention.

User Insights

- Evaluate the average waiting time of a patient.
- How many patients visit the hospital on a monthly basis?
- How many of patients have department-specific appointments?
- What is the breakdown of patient visits by age group?
- What is the average satisfaction by age group and race?
- What is the average wait time by age group and race?

Assumptions

- The data used is accurate and up-to-date, reflecting the real time information on patient wait times and other relevant measures.
- The proposed analysis and conclusions will be implemented affectively by Mercy General Hospital thus enhancing the overall emergency room efficiency.

Hypothesis

1. The average waiting time for patients in the hospital is expected to be influenced by factors such as the time of day, day of the week, and overall hospital workload, with the hypothesis that certain periods will exhibit longer wait times.
2. The average wait time for patients is anticipated to not differ among age groups and races, with the expectation that specific demographic factors may influence the efficiency of service delivery and contribute to variations in wait times.

About the data

The data used in the making of this report is obtained from a variety of sources. It contains the following attributes:

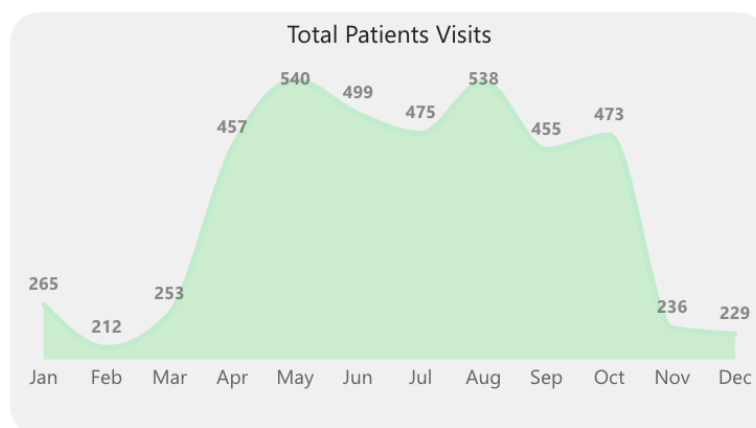| Column	Description
Date	Date & Time stamp of entry record of the patient
patient_id	Unique identifier for each patient
patient_gender	Gender of the patient (M for Male and F for Female)
patient_age	Age of the patient
patient_sat_score	Patient Satisfaction Score
patient_first_initial	First initial of patient's first name
patient_lastname	Last name of the patient
patient_race	Ethnicity of the patient being treated
patient_admin_flag	Boolean indicating whether the patient is an admin (Admin means the patient is registered as staff or any one under the hospital insurance)
patient_waittime	Wait time of patient in minutes
department_referral	Department to which the patient is referred.

About the dashboard

This dashboard is an insightful tool the provides a comprehensive view of Mercy General Hospital's Emergency Room. The one-page report delves into patient wait times, monthly visit trends, department-specific appointments, age group breakdowns, and satisfaction levels, empowering data-driven decision-making for improved healthcare efficiency.

Analysis

Patient Visits:

Total Patient Visits
9,216
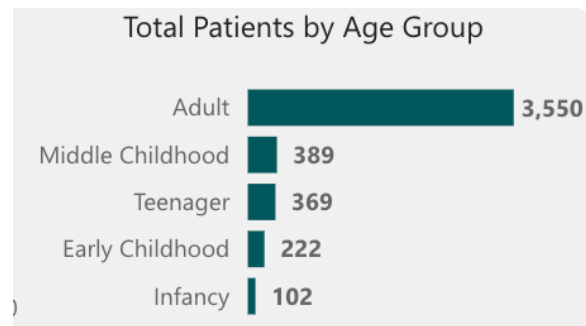50.04% Administrative Appointment
49.96% Non Administrative Appointment
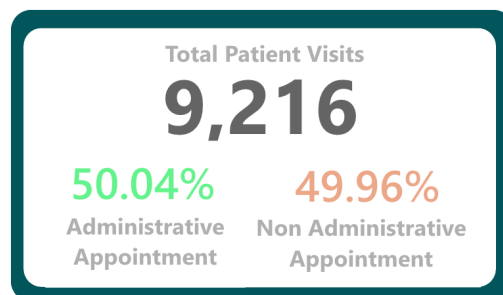
Mercy General Hospital's emergency room records show 9216 patient visits, with approximately 50.04% of appointments covered by hospital insurance or scheduled by hospital staff, leaving the remainder as non-administrative appointments.

Total Patients Visits

265   212   253   457   540   499   475   538   455   473   236   229
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Moving on to see how many patients visited the hospital over a period of one year, the annual visit data indicates a peak between May and August, with a significant decrease at year-start and end. Over the years 2019 and 2020, there's a clear increase in patient visits.


Total Patients In a Month
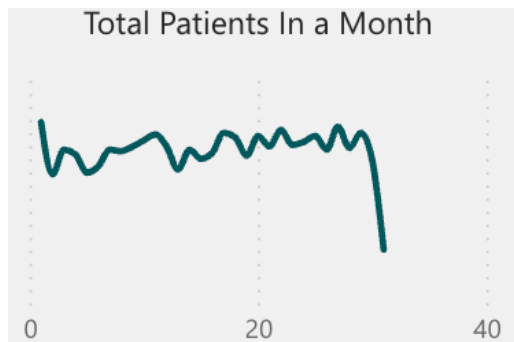
The line chart illustrates patient visit distribution over a month, revealing a higher volume in the second half compared to the first.

Total Patients by Age Group

Adult	3,550
Middle Childhood	389
Teenager	369
Early Childhood	222
Infancy	102

Patient age categorization includes infants (under 2), early childhood (2-6), middle childhood (6-12), teenagers (12-18), and adults (above 18), with adults making up the majority of visits. Notably, only 2% of patients are infants, while nearly 600 are children.

Gender Breakdown

Male
48.7%

Female
51.1%
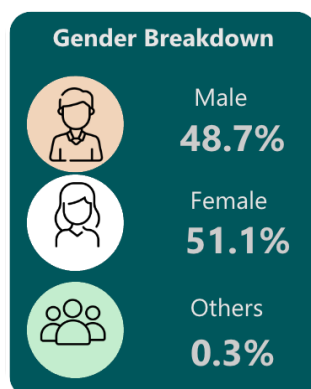
Others
0.3%

Let us now look into the gender breakdown among the patients. It is recorded that 48% of the patients who visit the Mercy General Hospital are men while 51% of the rest are female patients.

Total Patients Visits By Year

2,455

2,177
2019
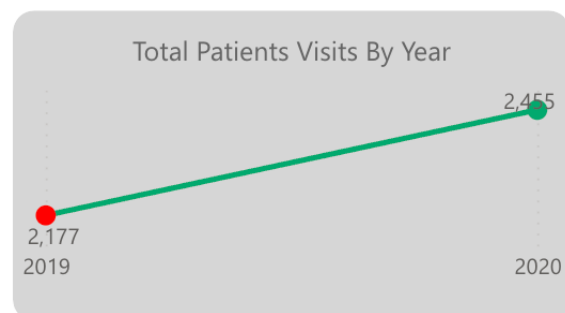
2020

Mercy General Hospital has records corresponding to the years 2019 and 2020. It is evidently seen that the number of patients visiting the hospital significantly increased over the year. There was a increase of 300 in the number of patients visiting the hospital in 2020 as compared to 2019.
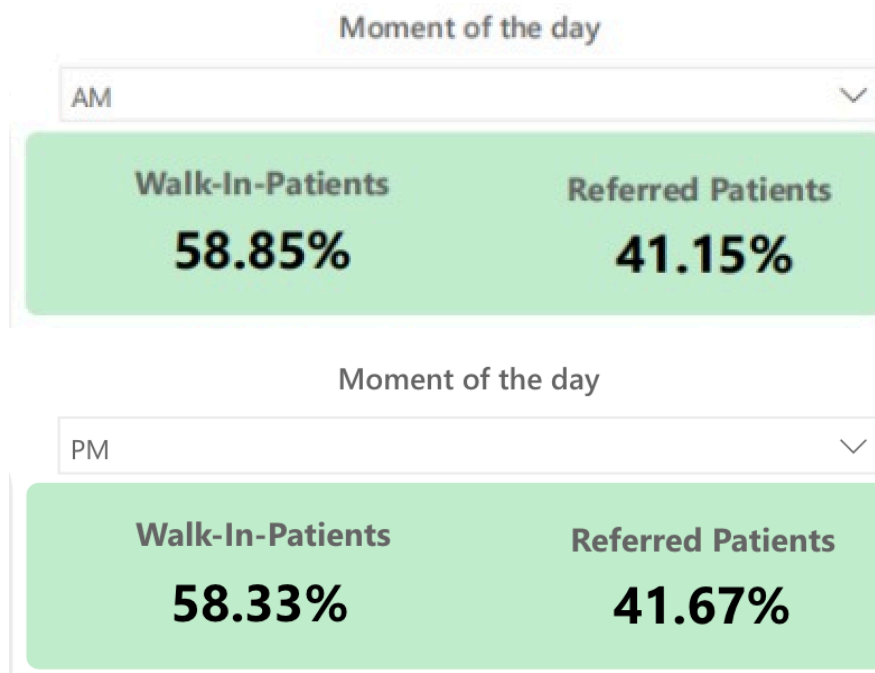
📌 Adults form the majority of patients, and there is a noticeable peak in hospital visits during May to August. Gender distribution is relatively balanced.

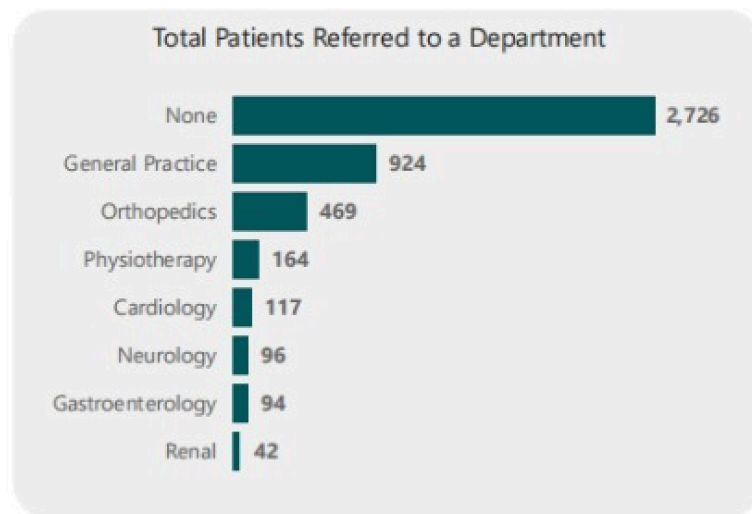Satisfaction Score and Average Wait Time:

Avg Satisfaction	Service Not Rated	Avg Wait Time
5.45	**75.71%**	**35.53**
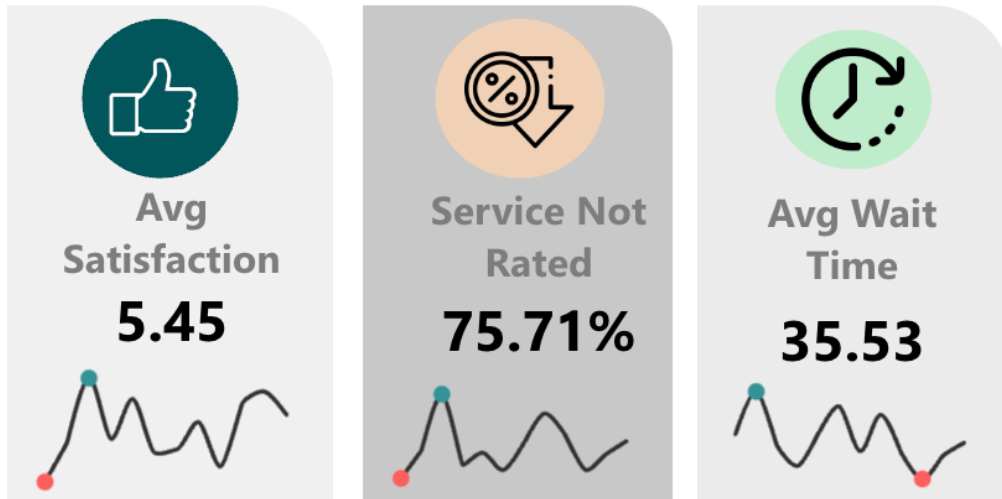
When asked how satisfied are the patients with the service provided at the Mercy General Hospital, the patients gave a average rating of 5.45 on a scale of 10. The low satisfaction score can be attributed to the average wait time of 35 minutes. Though this is a pretty low score, it only constitutes the ratings given by 25% of the patients. Rest of the 75% patients have not recorded their ratings.

📌 The overall satisfaction score is low (5.45 out of 10), largely influenced by a 35-minute average wait time. However, this dissatisfaction is expressed by only 25% of patients, suggesting potential areas for improvement.

Moment of the day

AM ⌄

Walk-In-Patients	Referred Patients
58.85%	**41.15%**

Moment of the day

PM ⌄

| Walk-In-Patients	Referred Patients
58.33%	**41.67%**

In Mercy General Hospital, nearly 60% of the consultations happen through walk-in-patients. While the rest of 40% of the patients are referred to the hospital. They either schedule an appointment prior in hand or for regular check ups. It is clear from the above visualizations that there is no drastic difference in the number of patients coming in directly or through referrals during different times of the day.

Total Patients Referred to a Department

Department	Count
None	2,726
General Practice	924
Orthopedics	469
Physiotherapy	164
Cardiology	117
Neurology	96
Gastroenterology	94
Renal	42

Among 9216 patients, over 50% weren't referred to any department. Among others, 924 patients were referred to general practice doctors, followed in line by 469 orthopedic patients. Although 164 patients came into the physiotherapy department, the cardiology, neurology, and gastroenterology have lower numbers.

📌 Around 60% of patients are walk-ins, while the remaining 40% are referred. General practice and orthopedics are the most common departments, while specialized areas like cardiology and neurology have lower patient referrals.
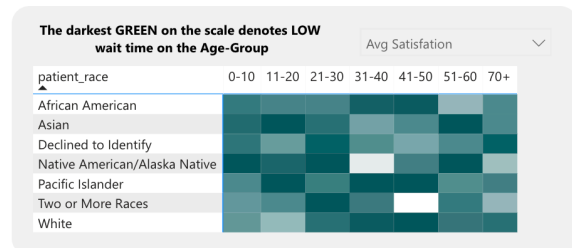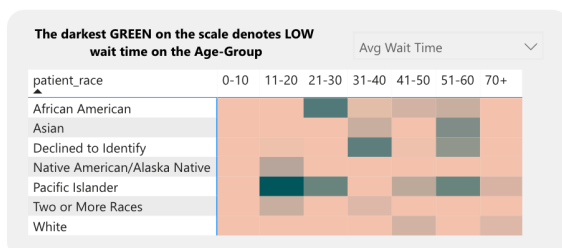
The initial heatmap illustrates average waiting times categorized by age group and ethnicity. Notably, patients aged 11-20 experience minimal wait times, with consistent satisfaction among Pacific Islanders across age ranges. Elderly patients in their 50s also express satisfaction. Conversely, the subsequent heatmap displays satisfaction rates across age groups irrespective of patient ethnicity, revealing consistently high scores across all demographics, indicating positive patient experiences and minimal variability based on ethnicity.

Conclusion

- The hospital can focus on improving processes to decrease average wait times, especially during peak months. This can significantly enhance overall patient satisfaction.

- Encourage more patients to provide feedback to get a more comprehensive understanding of satisfaction levels. Understanding the concerns of the 75% who haven't rated their experience will provide valuable insights.

- Explore ways to enhance services in specialized departments with lower referral rates. This may involve targeted marketing or collaborations with specialists to attract more patients.

- Consider tailoring services or appointment scheduling approaches for different age groups. For instance, accommodating preferences of patients aged 11-20 can improve their overall experience.

By addressing these aspects, Mercy General Hospital can enhance patient satisfaction, streamline services, and provide more tailored care to different demographic groups.