

# **FACTORS CONTRIBUTING TO WAITING TIME AMONG PATIENTS IN RADIOLOGY DEPARTMENT**

(27th FEBRUARY – 26<sup>TH</sup> MAY 2023)

PRESENTED BY -

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# OBJECTIVES



1

To identify the elements that affect patient wait times for X-rays, CT scans, and MRIs in the radiology department.

2

To assess the time interval from giving appointment to the patient till the queuing time.

3

To analyze the time from queuing of patient to check-in the patient for investigation.

4

To assess the time of patient check-out after the investigation procedure

5

To provide recommendations based on study findings.

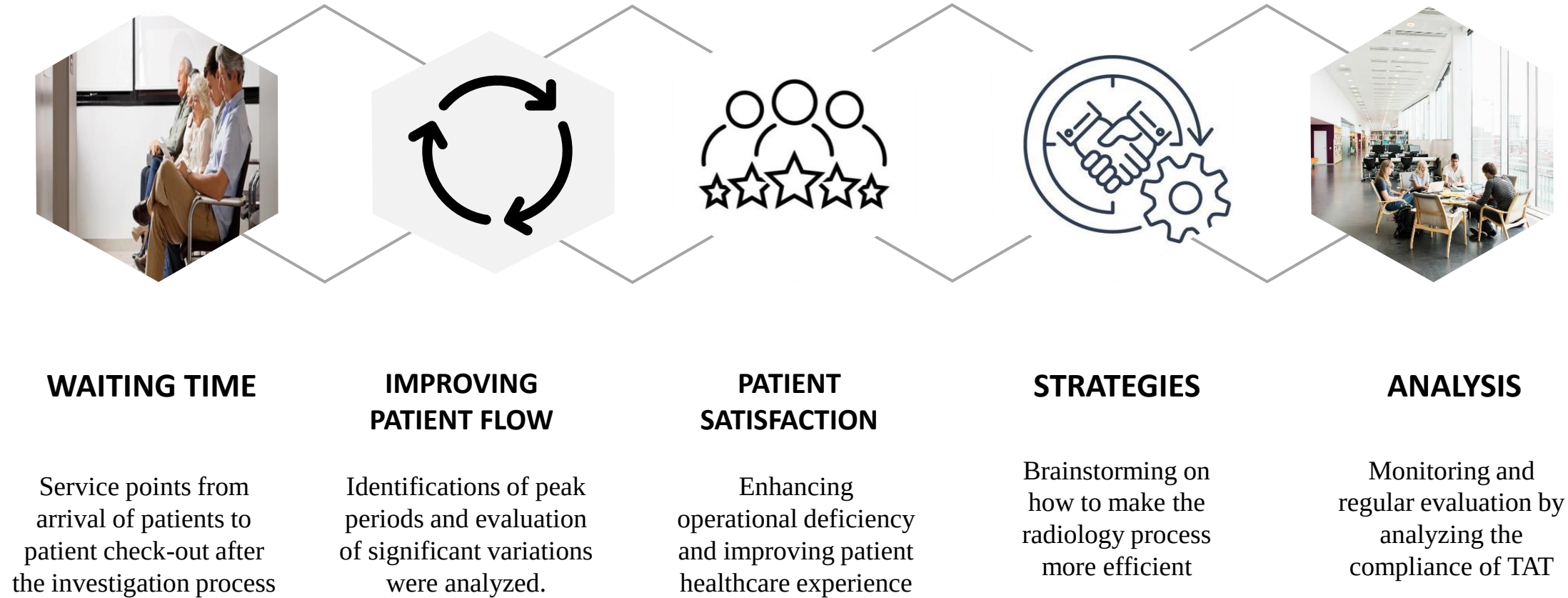
# ORGANIZATION

Krishna Institute of Medical Sciences, KIMS hospital operates in a dynamic environment. KIMS is at the apex of the healthcare system in Hyderabad and across **Telangana, Andhra Pradesh and Maharashtra** with huge number of patients seeking medical attention from the organization.

- Operates with beds ranging from **150 – 1000** in all its unit. In addition, accessibility, affordability of quality in care and good reputation of the doctors play a key role in high turnover of patients.
- KIMS offer a bouquet of comprehensive healthcare services across 25 specialties including **cardiac sciences, oncology, neurosciences, gastric sciences, orthopedics, organ transplantation, renal sciences, and mother & child care.**



# INTRODUCTION



# RADIOLOGY - WAITING TIME

- Radiology is a branch of medicine which helps in the diagnosis and treatment of various pathological conditions by using various imaging technologies.
- Common radiological techniques or modalities that are used for imaging are X-ray, CT, MRI, USG. Here at KIMS hospital, for radiology department use of QMS software is implemented which helps in queuing of the patients.
- Patient waiting time is an important indicator of quality of services provided by the hospital. There are no standard or universally accepted definitions of waiting time as the estimates of waiting time may vary significantly. In radiology department the patient waiting time was a total period of time a patient spends to obtain radiological services.
- Long wait time limits the ability to provide right care, at the right time which also ends up at patient dissatisfaction.



# METHODOLOGY



## STUDY DESIGN

An observational cross-sectional study design is used to explore the conceptual model of patient waiting time.



## STUDY POPULATION

Patients coming for various radiological investigations (X-Ray, USG, MRI and CT) including OPD and IPD patients .



## RESEARCH APPROACH

Quantitative study data was gathered using a standardized procedural flow.



## SAMPLING TECHNIQUE

A non-probability sampling technique called convenience sampling



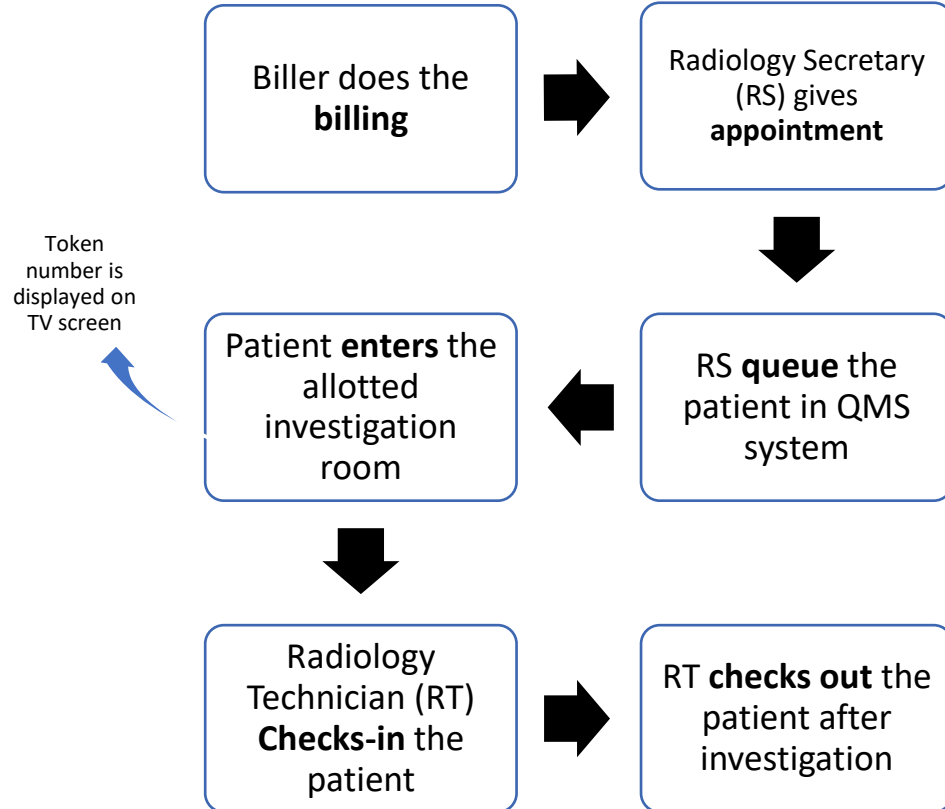
## STATISTICAL METHOD

Waiting time data was examined using MS Excel and represented using Pivot table and charts.

# PROCESS FLOW

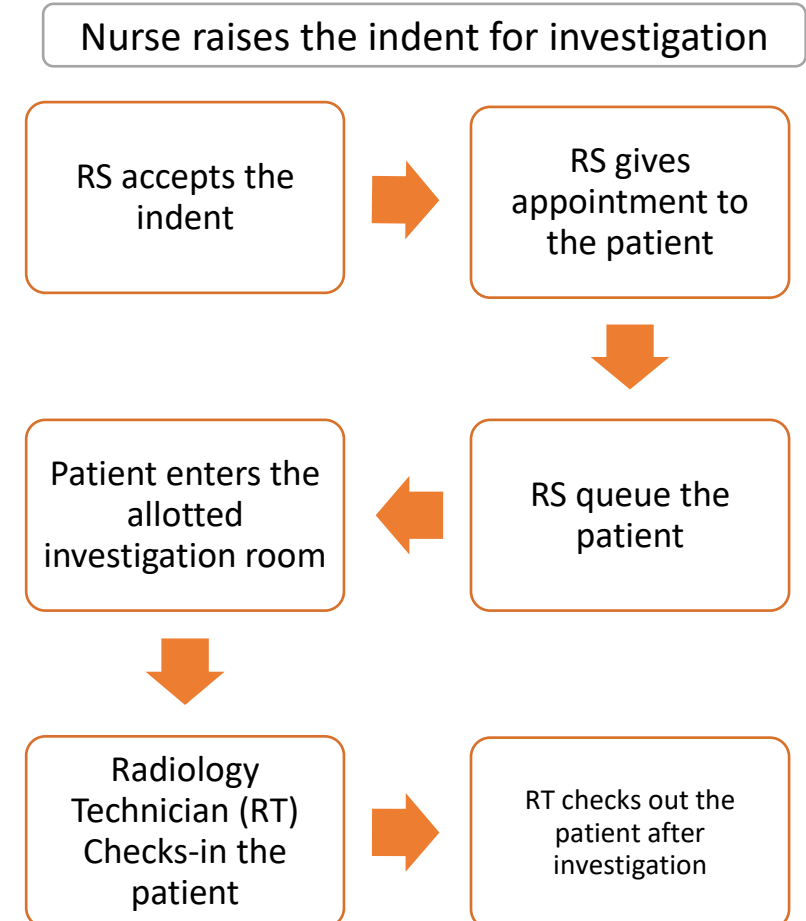
## RADIOLOGY OPD

TAT – QUEUE TIME TO CHECK-IN TIME



## RADIOLOGY IPD

TAT – QUEUE TIME TO CHECK-IN TIME



# OBSERVATIONS

## RADIOLOGY DELAYS

01.



Initially, the radiology department were facing some issues regarding patient flow management.

02.



Difficulty for the radiology secretary to queue the patient as he was multi-tasking.

03.



Transport service for moving patient from one service to another was found to be very poor.

04.



The appointment used to keep jumbling between the two x-ray rooms.

05.



Upgradation of new codes in the system

06.



Display TV showing the token number for patient's turn used to get switched off

07.



System issue observed which caused delay in giving appointment.

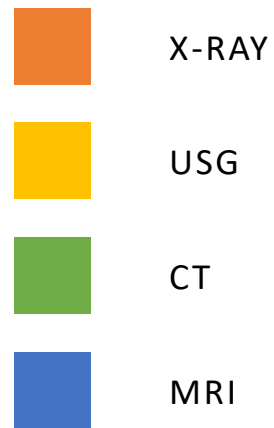
08.



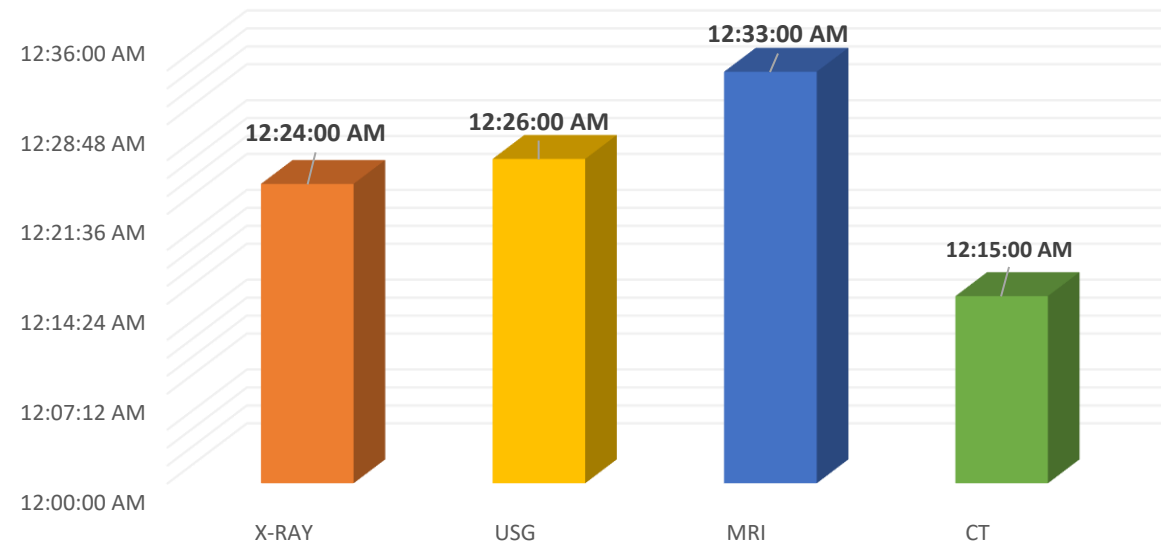
Configuration of two radiologist instead of one



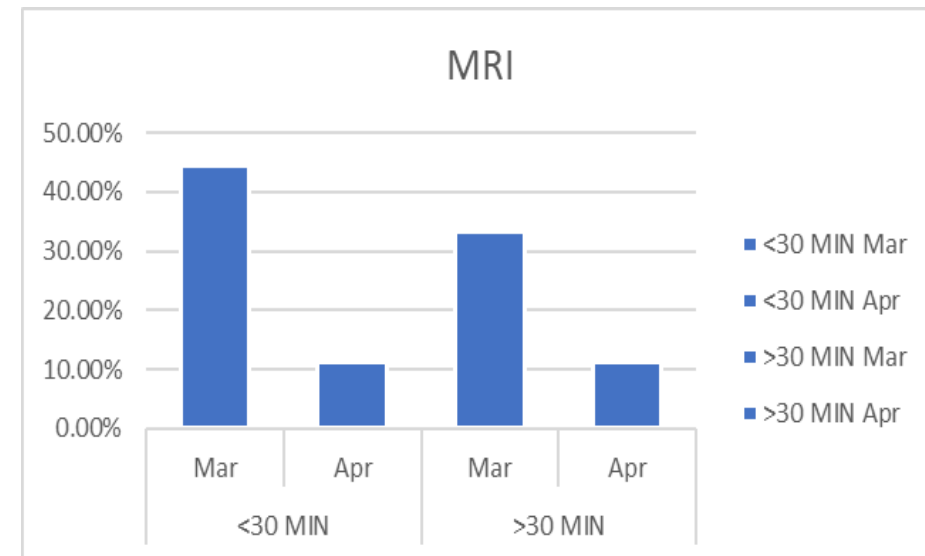
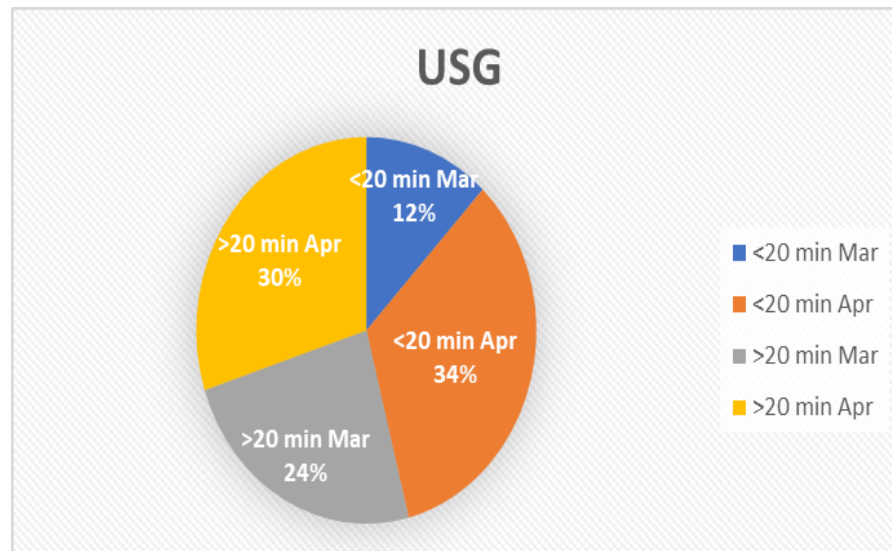
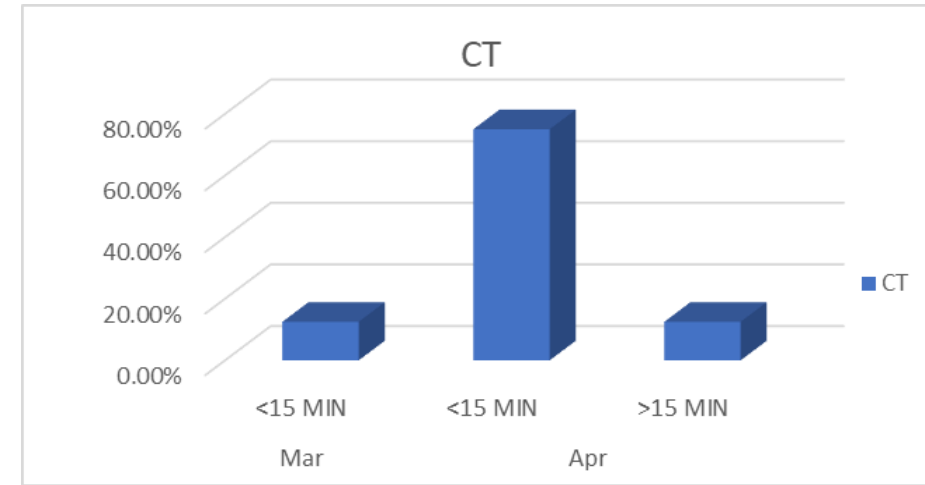
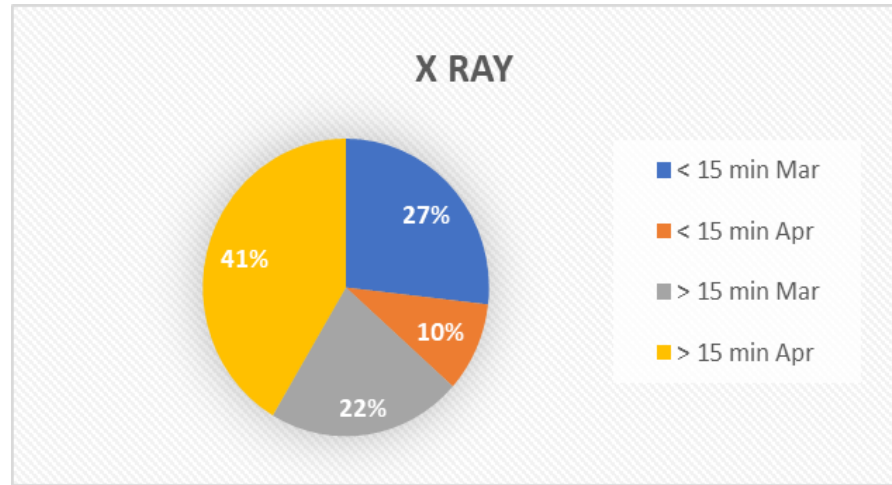
## AVERAGE TAT FOR RADIOLOGY SERVICES



AVG WAITING PERIOD (in minutes)



# WAITING TAT(in %) FOR EACH MODALITY

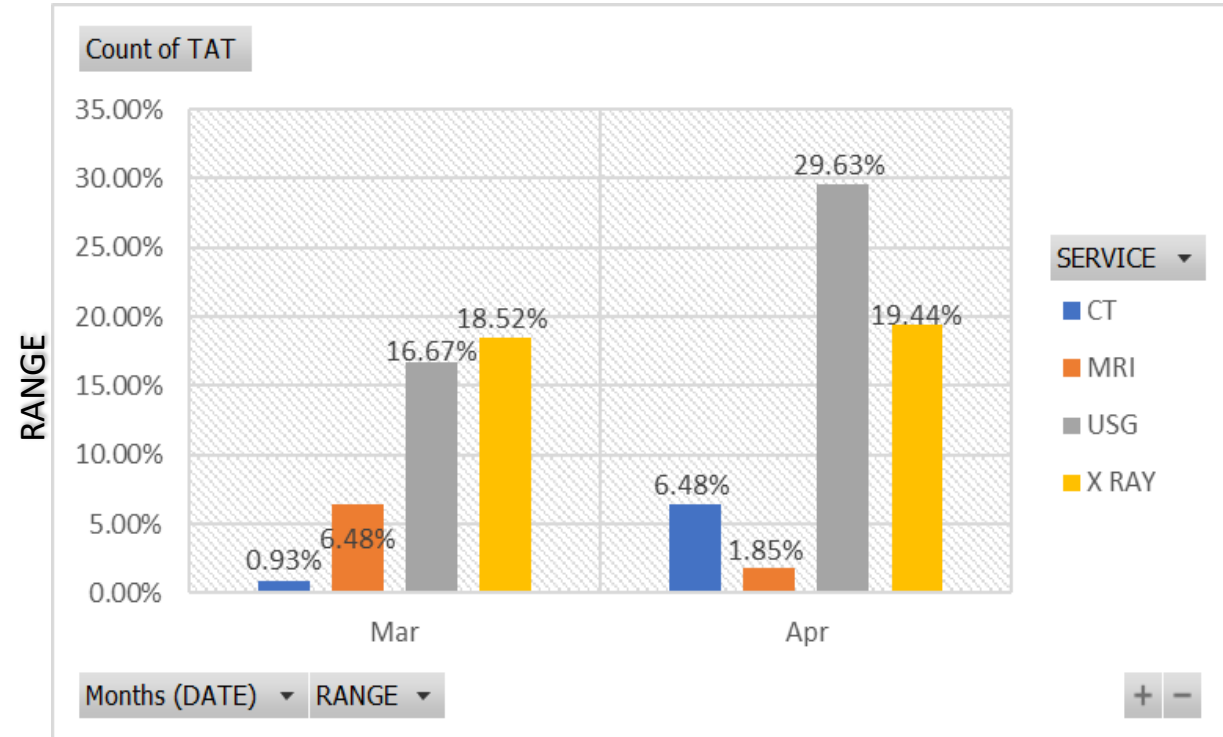


# ANALYSIS – from 13<sup>th</sup> March to 20<sup>th</sup> April 2023.

- The average waiting time that is being differs for every service modality; range for

**X-RAY – 15minutes (b) USG – 20minutes (c) CT – 10minutes (d) MRI – 30minutes.**

| Count of TAT |       |       |        |        |             |
|--------------|-------|-------|--------|--------|-------------|
| Row Labels   | CT    | MRI   | USG    | X RAY  | Grand Total |
| Mar          | 0.93% | 6.48% | 16.67% | 18.52% | 42.59%      |
| < 15 min     | 0.00% | 0.00% | 0.00%  | 10.19% | 10.19%      |
| <15 MIN      | 0.93% | 0.00% | 0.00%  | 0.00%  | 0.93%       |
| <20 min      | 0.00% | 0.00% | 5.56%  | 0.00%  | 5.56%       |
| <30 MIN      | 0.00% | 3.70% | 0.00%  | 0.00%  | 3.70%       |
| > 15 min     | 0.00% | 0.00% | 0.00%  | 8.33%  | 8.33%       |
| >20 min      | 0.00% | 0.00% | 11.11% | 0.00%  | 11.11%      |
| >30 MIN      | 0.00% | 2.78% | 0.00%  | 0.00%  | 2.78%       |
| Apr          | 6.48% | 1.85% | 29.63% | 19.44% | 57.41%      |
| < 15 min     | 0.00% | 0.00% | 0.00%  | 3.70%  | 3.70%       |
| <15 MIN      | 5.56% | 0.00% | 0.00%  | 0.00%  | 5.56%       |
| <20 min      | 0.00% | 0.00% | 15.74% | 0.00%  | 15.74%      |
| <30 MIN      | 0.00% | 0.93% | 0.00%  | 0.00%  | 0.93%       |
| > 15 min     | 0.00% | 0.00% | 0.00%  | 15.74% | 15.74%      |
| >15 MIN      | 0.93% | 0.00% | 0.00%  | 0.00%  | 0.93%       |
| >20 min      | 0.00% | 0.00% | 13.89% | 0.00%  | 13.89%      |
| >30 MIN      | 0.00% | 0.93% | 0.00%  | 0.00%  | 0.93%       |
| Grand Total  | 7.41% | 8.33% | 46.30% | 37.96% | 100.00%     |



Graphical representation showing the waiting TAT for March and April in which the waiting time for USG was increased by 12%

# RESULTS & DISCUSSION

The comparison highlights consistently long waiting times for USG and X-ray, indicating the need for targeted actions to address the unique issues associated with these modalities

- **X-ray** had a TAT waiting time percentage of **18.52%** in **March** and **19.44%** in **April**, highlighting the need for improved efficiency to reduce wait times and enhance patient satisfaction.
- There is room for improvement in minimizing delays, as a sizeable fraction of X-ray patients (8.33%) had wait times longer than 15 minutes.
- The majority of CT and MRI scans took between 5 and 10 minutes, with waiting times for those procedures being noticeably shorter.
- There were no procedures with wait times under 15 minutes in April, with **USG** having the highest TAT waiting time percentage at **29.63%** and **X-ray** having a similarly large wait time at **19.44%**.
- When the entire number of TATs is taken into account, X-ray (37.96%), CT (7.41%), and MRI (8.33%) all have significant percentages, but **USG** has the **highest rate at 46.3%**.

# ROOT CAUSE ANALYSIS (RCA)

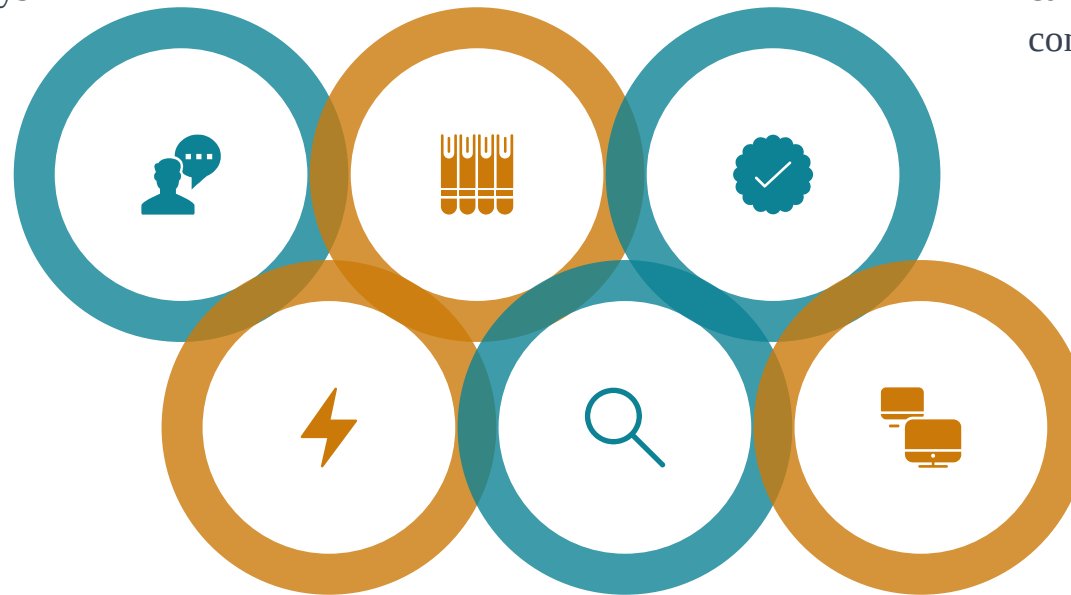
## **Patient no shows and late arrival:**

patients do not show up for their appointments or arrive late, it can disrupt the workflow and cause delays for other patients.

## **Communication and coordination:**

Poor communication and coordination can lead to delays.

**Policies and procedures:** If the policies are outdated, unclear, or not effectively implemented, they can hinder efficiency and contribute to delays.



## **Workload and staffing levels:**

Insufficient staffing levels or imbalances in the workforce can impact waiting times..

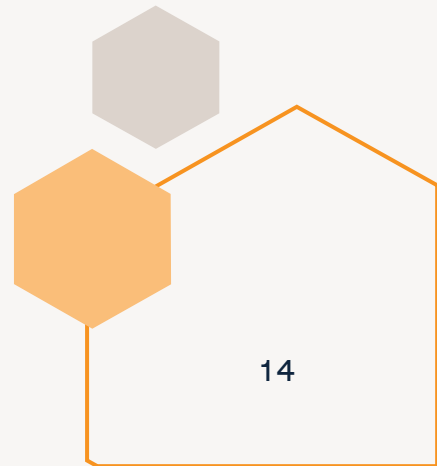
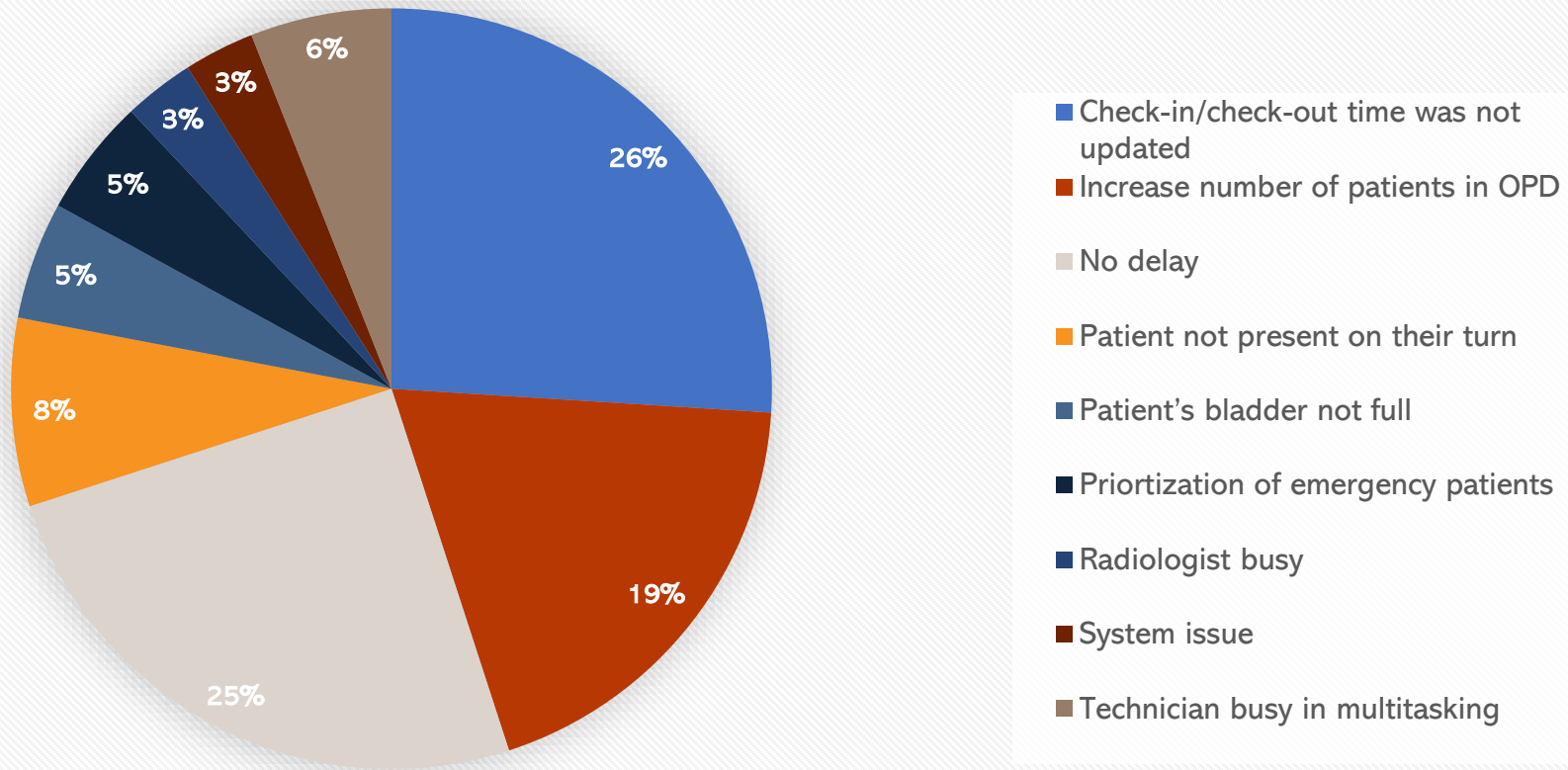
## **Emergency cases and prioritization:**

presence of emergency cases that require immediate attention can affect waiting times for non-emergency cases.

**Scheduling appointments :** Poor or ineffective appointment scheduling procedures can result in crowding and prolonged wait times.

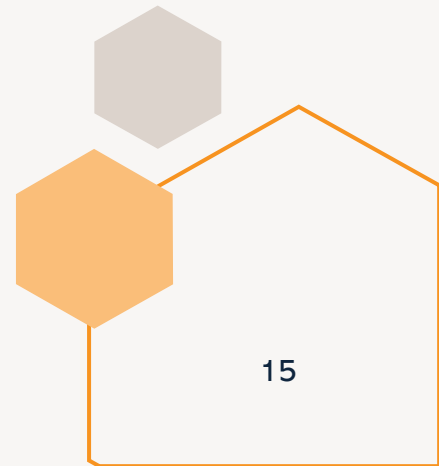
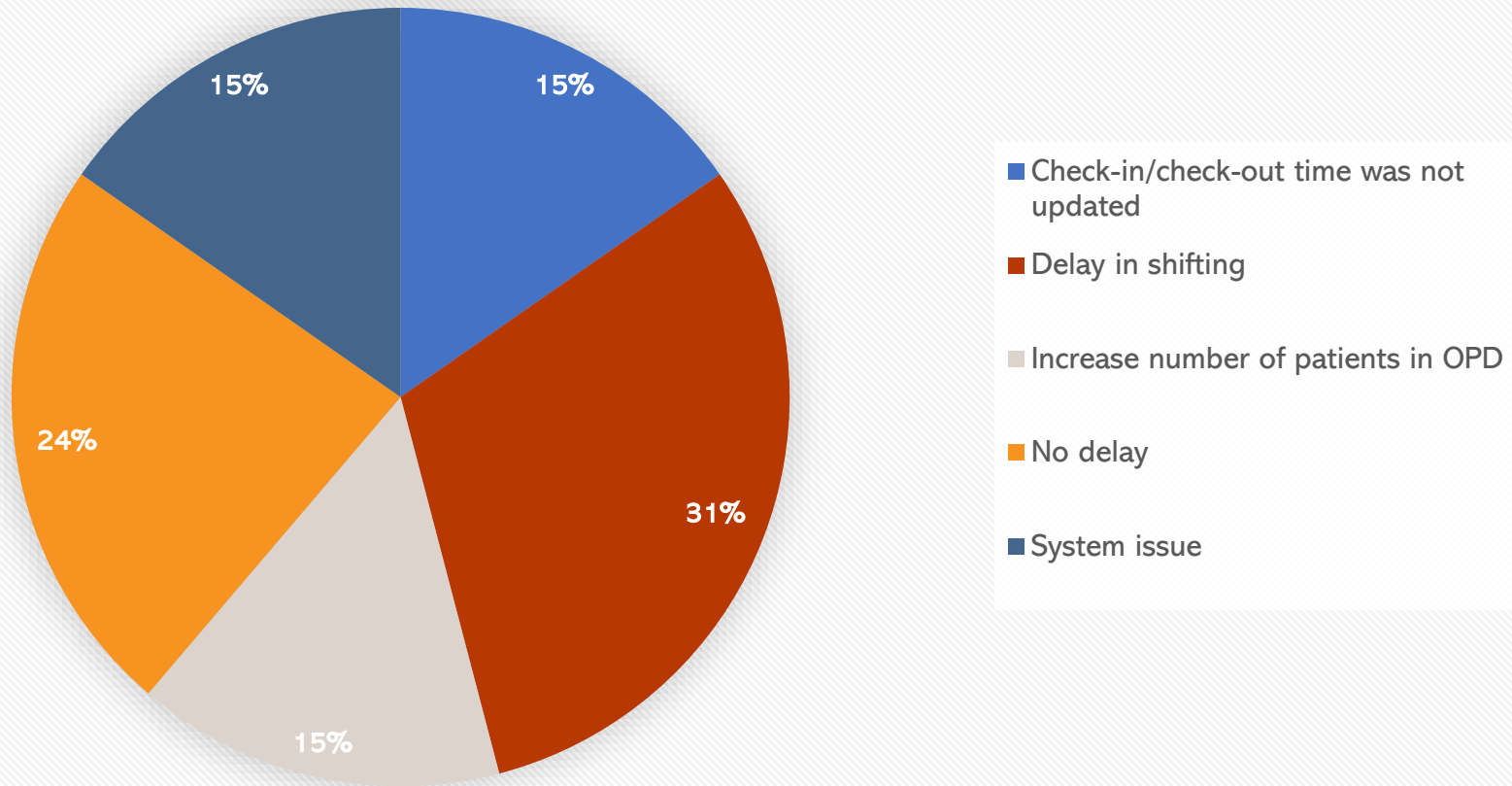
# ANALYSIS (RCA)

Root cause analysis for OP patients



# ANALYSIS (RCA)

Root cause analysis for IP patients



# CONCLUSION

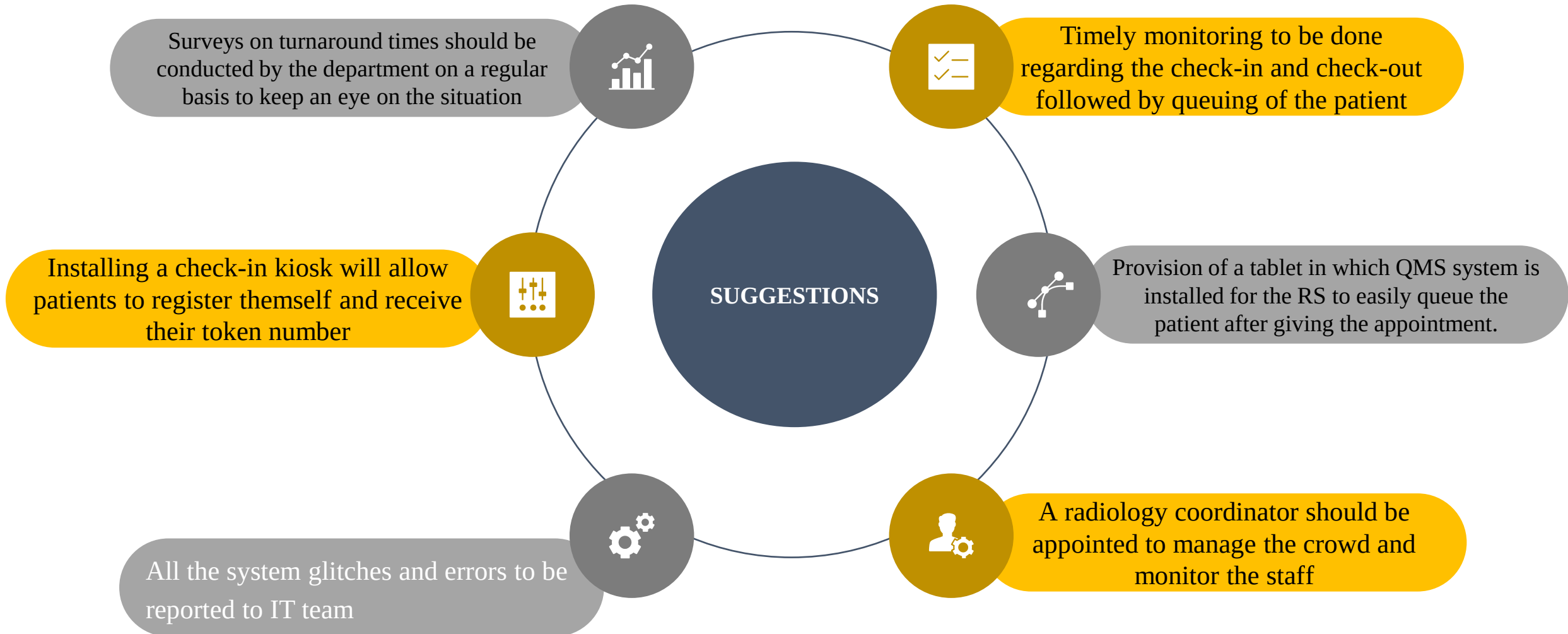


According to study findings, decreasing long wait times in the radiology department is essential for raising patient satisfaction and faith in medical professionals.

- Long waiting periods of over 30 minutes impact patient satisfaction with healthcare services.
- Lack of patient preparation is the main cause of delays, requiring focused solutions and procedural improvements.
- Variations in turnaround time highlight the need for improved efficacy in X-ray services to reduce wait times and enhance satisfaction.
- Continuous monitoring, workflow analysis, and feedback collection help identify and address underlying causes of delays.
- Automation and technological advancements can greatly improve turnaround time in radiology, benefiting the patient experience.
- Reducing wait times in the radiology department is crucial for patient satisfaction and requires targeted interventions.



# SUGGESTIONS



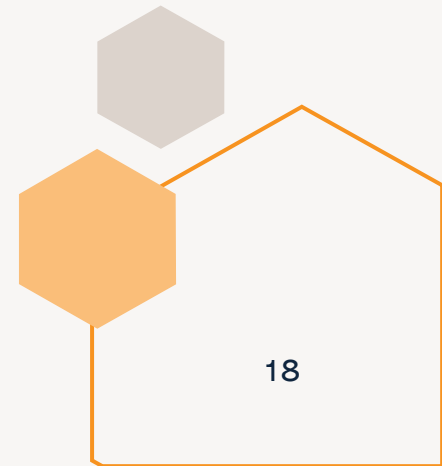
# PROJECTS STUDIED

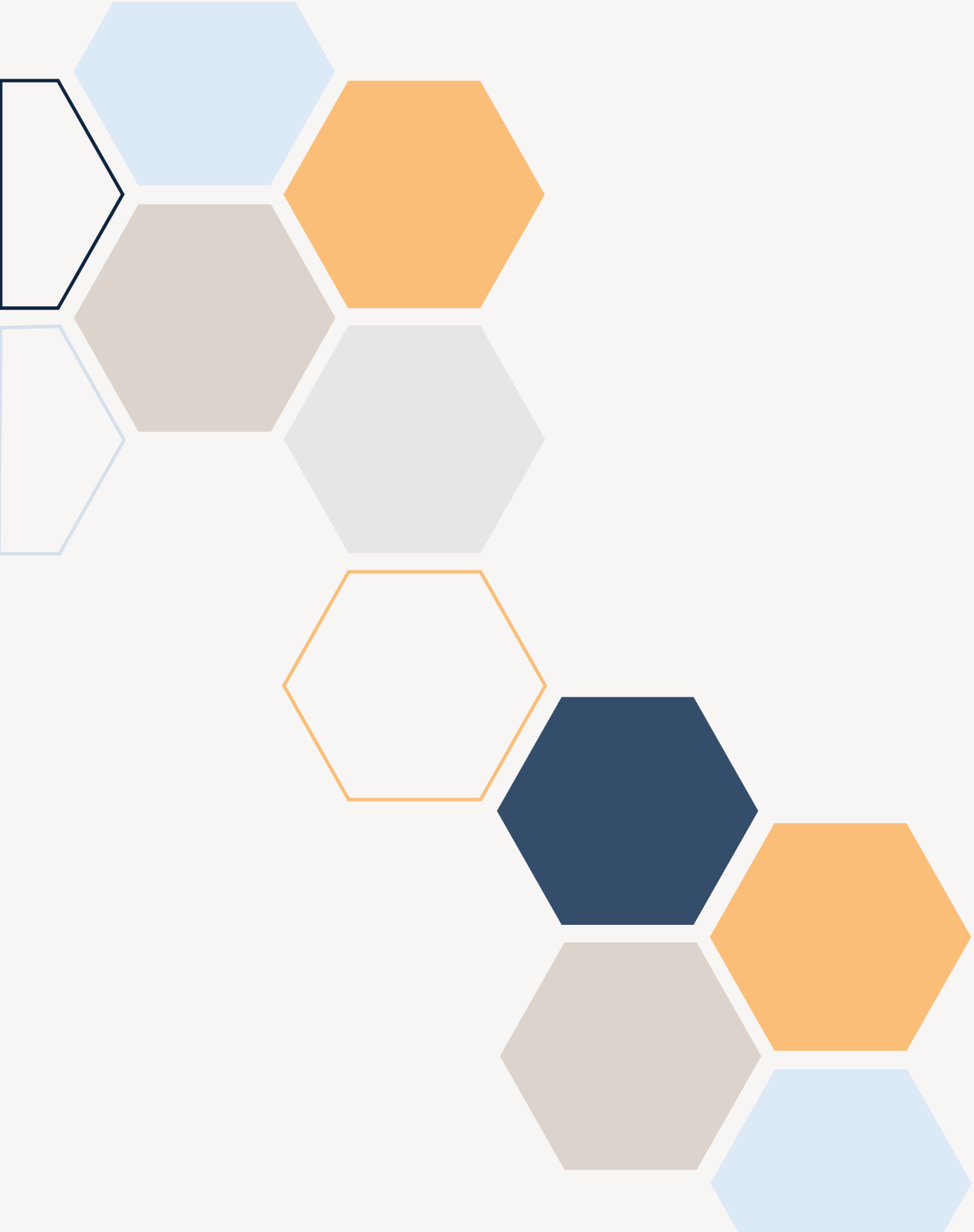


1. **Factors contributing to waiting time among patients in radiology department**
2. **Detailed process mapping of radiology services (Gachibowli)**
3. **Factors affecting the bed transfer / allotment delay**

- **OTHER LEARNINGS -**

- Learning MetaHos (Queue Management System for OPD) and tracking its compliance (Gachibowli)
- EHR- understood basic concepts
- Detailed process mapping of discharge
- Tracking discharges for Gachibowli and Paradise unit.





**THANK YOU !**

