

**An empirical study to identify the determinants of patient
satisfaction, experience and impact of appointment waiting
time of radiology department**

CARE HOSPITALS, HYDERABAD.

AN INTERNSHIP PROJECT REPORT SUBMITTED TO

International Institute of Health Management Research, New Delhi

By

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(PG/20/013)

Post-graduate Diploma in Hospital and Health Management 2020-2022



International Institute of Health Management Research, New Delhi

Table of Contents

DECLARATION	1
CERTIFICATE	2
CERTIFICATE	3
ACKNOWLEDGEMENT	4
PROJECT PROFILE	5
Executive summary	7
CHAPTER – I	8
INTRODUCTION	8
1.1 ABOUT THE ORGANIZATION	8
1.2 RADIOLOGY DEPARTMENT AT CARE HOSPITAL	13
1.3 ORGANOGRAM OF RADIOLOGY DEPARTMENT	14
PROBLEM STATEMENT	19
CHAPTER – II	21
REVIEW OF LITERATURE	21
INTRODUCTION	22
MATERIALS AND METHODS	23
RESULTS	24
DEFINITIONS	26
CHAPTER III	27
METHODOLOGY	27
RESEARCH PLAN	28
RESEARCH DESIGN	30
DATA COLLECTION TECHNIQUES	31
DATA ANALYSIS	32
CHAPTER-IV	33
ANALYSIS AND INTERPRETATION	33
CHAPTER - V	38
FINDINGS AND SUGGESTION	38
Findings:	38
Major causes of delay in process	39

RECOMMENDATIONS TO IMPROVE PROCESSES:.....	40
CHAPTER - VI	50
CONCLUSION.....	50
BIBLIOGRAPHY	52
REFERENCES	53



DECLARATION

I hereby declare that the work embodied in this report is the result of the study done by me in, International Institute of Health Management Research, New Delhi, under the guidance of Dr Nikita Sabherwala

MOHAMMAD ASHNAB KHAN

june, 2022

Certification from Dissertation Advisory Committee

This is to certify that Mr. Mohammad Ashnab Khan Graduate student of PGDM (Health & Hospital Management) has worked under our guidance and supervision. He is submitting his dissertation titled “An empirical study to identify the determinants of patient satisfaction, experience and impact of appointment waiting time of radiology department” in partial fulfilment of the requirements for the award of PGDM (Health & Hospital Management).



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CERTIFICATE

The certificate is awarded to
MOHAMMAD ASHNAB KHAN
In recognition of having successfully completed his project on

**An empirical study to identify the determinants of patient satisfaction,
experience and impact of appointment waiting time of radiology
department**

Date: 28/02/2022 - 30/05/2022

Organization: CARE Hospitals

He comes across as a committed, sincere & diligent person who has
strong drive and zeal for learning.

We wish him all the best for future endeavors.



MR A.R.S Satyanarayana

Head-Business

Development, CARE

Hospital, Hyderabad.

Certificate of Approval

The following dissertation titled **"An empirical study to identify the Determinants of patient satisfaction, experience and impact of appointment waiting time of radiology department"** at **"CARE Hospitals, Hyderabad"** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of PGDM (Hospital & health Management) for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

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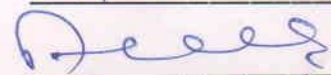
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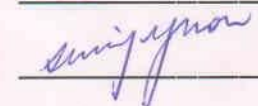
DR. A. K. KHOKHAR

DR. SHILPA GADGE

Signature









INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT
RESEARCH, NEW DELHI

CERTIFICATE


This is to certify that project entitled **“An empirical study to identify the determinants of patient satisfaction, experience and impact of appointment waiting time of radiology department”, HYDERABAD.**

Submitted to **International Institute of Health Management Research, New Delhi** is a record of Bonafide work carried out from 28th February to 30 may 2022 by Mohammad Ashnab Khan

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation

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Dean (Academics and Student Affairs)

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ACKNOWLEDGEMENT

The Dissertation opportunity I had with CARE Hospitals was a great chance for learning and professional development. I am using this opportunity to express my deepest gratitude and special thanks to the General Manager (HEAD- BUSINESS DEVELOPMENT) of CARE Hospitals, Mr. A.R.S Satyanarayana who in spite of being extraordinarily busy with his duties, took time out to hear, guide and keep me on the correct path and allowing me to carry out my project at their esteemed organization.

I express my deepest thanks to for taking part in useful decision & giving necessary advices and guidance and arranged all facilities to make life easier. I choose this moment to acknowledge her contribution gratefully.

It is my radiant sentiment to place on record my best regards, deepest sense of gratitude to Ms. Shiny Priyanka, Senior Executive, Mr. Vikas, Executive, Ms. Lily, and Ms. Saphora Tasneem, Quality Manager for their careful and precious guidance which were extremely valuable for my study both theoretically and practically.

I would like to express my deepest sense of gratitude to Dr. Nikita Sabherwal Associate Dean (Training) Associate Professor (Hospital Administration, IIHMR-D for her precious guidance which was extremely valuable for my study.

I perceive as this opportunity as a big milestone in my career development. I will strive to use gained skills and knowledge in the best possible way, and I will continue to work on their improvement, in order to attain desired career objectives.

My sincere thanks to all!

PROJECT PROFILE

NAME OF THE INSTITUTE: International Institute of Health Management Research, New Delhi

TITLE: An empirical study to identify the determinants of patient satisfaction, experience and impact of appointment waiting time of radiology department

PROJECT CONDUCTED BY : MOHAMMAD ASHNAB KHAN

PROJECT GUIDE : Dr. Nikita Sabherwal

ABSTRACT

The Department of Diagnostic Imaging and Therapeutics provides clinical services in diagnostic radiology. Ultrasound, Vascular Laboratory cross sectional imaging CT scan and magnetic resonance imaging, nuclear and radiation oncology.

This study was conducted at CARE hospitals, Hyderabad. This project aims at measuring the of patient waiting time and further streamlining the entire process , finding causes of waiting time of suggesting recommendations in the existing process flow and finding out constraints that limit the Department Efficiency and Productivity, which when removed would improve Patient Satisfaction along with Employee and Physician Satisfaction. It follows the Descriptive methodology In the radiology Department of CARE hospital. The Analysis was done using the MS Excel software. Changes are proposed that will ultimately improve the overall effectiveness of the Radiology Department leading to increased Patient satisfaction.

Executive summary

This study aimed at analyzing the existing process flow of all processes of radiology department at CARE hospital, and to give suggestions to improve the process in order to enhance patient flow, patient satisfaction and also to streamline the appointment process to minimize the outpatient waiting time.

During the period of Three month from 28th February to 30th May 2022, I tried to study the existing processes of the radiology department by the means of 'Time and Motion Study'.

I started the project with an orientation to the hospital where I got familiar with the different departments and the hospital environment. In the next few days I observed the entire process of radiology department of all four modalities (X ray, CT, MRI and USG) starting from the appointment given to patient to the procedure and final check out of the patient. The average time taken for individual process here was a bit lengthy but, if the process is streamlined then it can be optimum. Registration and reporting were found to be major causes of delay. The greatest benefits are derived through identifying and eliminating wastes in the process, such as wasted motion and wasted time. Other benefits occur due to the prevention of manual and technical errors and reduction in the department.

CHAPTER – I

INTRODUCTION

1.1 ABOUT THE ORGANIZATION :

Figure: 1



PROFILE OF HEALTH CARE ORGANIZATION

Founded in 1997 by a team of India's leading cardiologists, CARE Hospitals started its journey as a 100-bedded Heart Institute with a core team of 20 cardiologists, 1 operating theatre, and 1 catheterization laboratory. 24 years later, the CARE Hospitals Group is a multi-speciality healthcare provider with 14 healthcare facilities in 6 cities across 5 states of India. It is the regional leader in South and Central India and is amongst the top 5 Pan-Indian hospital chains. CARE Hospitals delivers comprehensive care in over 30 specialities. Adopting a service-oriented delivery model, CARE Hospitals provides cost-effective medical care, with an uncompromising commitment to its core purpose – 'To make quality healthcare accessible at affordable costs to all'

CARE Hospitals was instituted in 1997, Started with 50 beds, 20 cardiologists the Group has now evolved as a multi-speciality health care provider with 14 health care facilities in 6 cities across 5 states with over 2200 beds.

Our Vision, Mission and Values

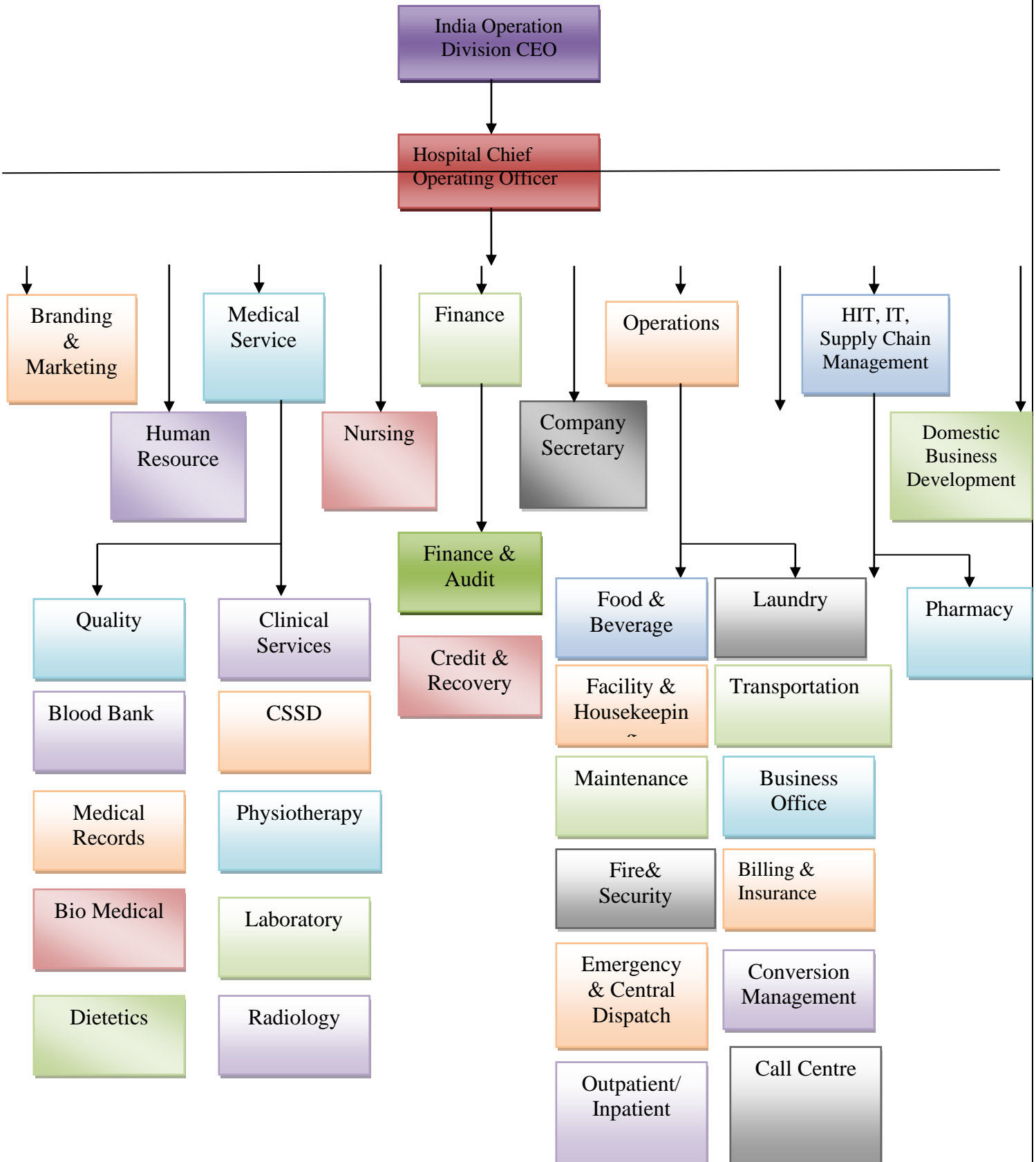
Vision: To be a trusted, people-centric integrated healthcare system as a model for global healthcare

Mission: To provide the best and cost-effective care, accessible to every patient through integrated clinical practice, education and research.

Values:

- **Transparency:** Being transparent requires courage and we stand for transparency. Every aspect of our business is clear and comprehensive to the relevant stakeholder and we never compromise on the fundamentals at any cost.
- **Teamwork:** A collaborative work ecosystem is where all the collective efficiencies are harnessed and propelled towards delivering the best possible care.
- **Empathy & Compassion:** The ability to understand and respond to the feelings of both the patients and the employees, so that all the services are rendered in a supportive work environment with a humane touch.
- **Excellence:** When every action aims at enhancing quality, the outcome is always excellence. Each member in our team strives with the same intensity in every action, be it healthcare or any other dimension of the organisational processes.
- **Education:** Learning continuously to create an advanced and sustainable healthcare system that results in collective growth of both the employees and the organization.
- **Equity:** Mutual trust based on fair and impartial consideration of all professional matters, so that it can foster positive contribution towards the institutional purpose.
- **Mutual trust & respect:** We do not discriminate against anyone on any grounds. Respect is a traditional trait in us and we respect everyone, for we believe that trust grows respect, which forms the foundation of real success.

CARE Hospitals Organogram



Emergency

- 24 Hour Accident & Emergency
- One of the largest Emergency Centers with an Acute Chest Pain Centre, Stroke Centre, Trauma Centre & Urgent Care Family Clinic manned by a Rapid Action Team.

Out Patient Facilities

- Offers comprehensive services in in multiple specialties.
- Extended Evening Hours Clinic in Cardiology, General Physician, Gynecology, Orthopedics, Pediatrics.

In Patient Facilities

- 220 Beds
- 5 state of the art Operation Theatres
- Water Birthing Rooms
- Fully equipped ICUs
- Emergency Operating Rooms

Diagnostic Services

- Ambulatory Blood Pressure (ABP)
- Ambulatory Electrocardiogram (Holter Monitoring)
- Diagnostic Echocardiography (Doppler & Color Doppler)
- Electrocardiogram (ECG)
- Electroencephalogram (EEG)
- Treadmill Testing (TMT)

Imaging Services

- X- Ray
- Bone Mineral Densitometry
- 64 Slice HD Computed Tomography Scan (CT)
- Contrast Examinations
- Diagnostic Plain Film Radiography
- Fluoroscopic Examinations
- Interventional Services
- Angiography etc...

Major Specialties

- Cardiology
- oncology
- Andrology
- Apheresis Unit
- Bariatrics
- Breast Centre
- Anesthesiology
- Critical Care
- CTVS- Cardiothoracic & Vascular Surgery etc...

1.2 RADIOLOGY DEPARTMENT AT CARE HOSPITAL.

Department of Radiology & Nuclear Medicine provides the complete spectrum of imaging services ranging from simple radiographs and ultrasounds to complicated nuclear & molecular imaging, neurological and musculoskeletal interventional imaging among others.

- Adult Medicine Imaging
- Abdominal Imaging & Intervention
- Breast Imaging
- Cardiovascular Imaging
- Emergency Imaging
- Musculoskeletal Imaging & Intervention
- Neurological Imaging
- Neurological Intervention
- Nuclear Medicine and Molecular Imaging
- Pediatric Imaging
- Thoracic Imaging & Intervention

LOCATION:

CARE Hospital in radiology department is located in 1st floor besides the 2nd OPD.)

Shifts in a Day: There are two shifts in a day

First shift –from 8 am to 5pm

Second shift - from 11 Am to 8 pm

B) **Staff available in Radiology :**

Total staff available in whole day

1.3 ORGANOGRAM OF RADIOLOGY DEPARTMENT

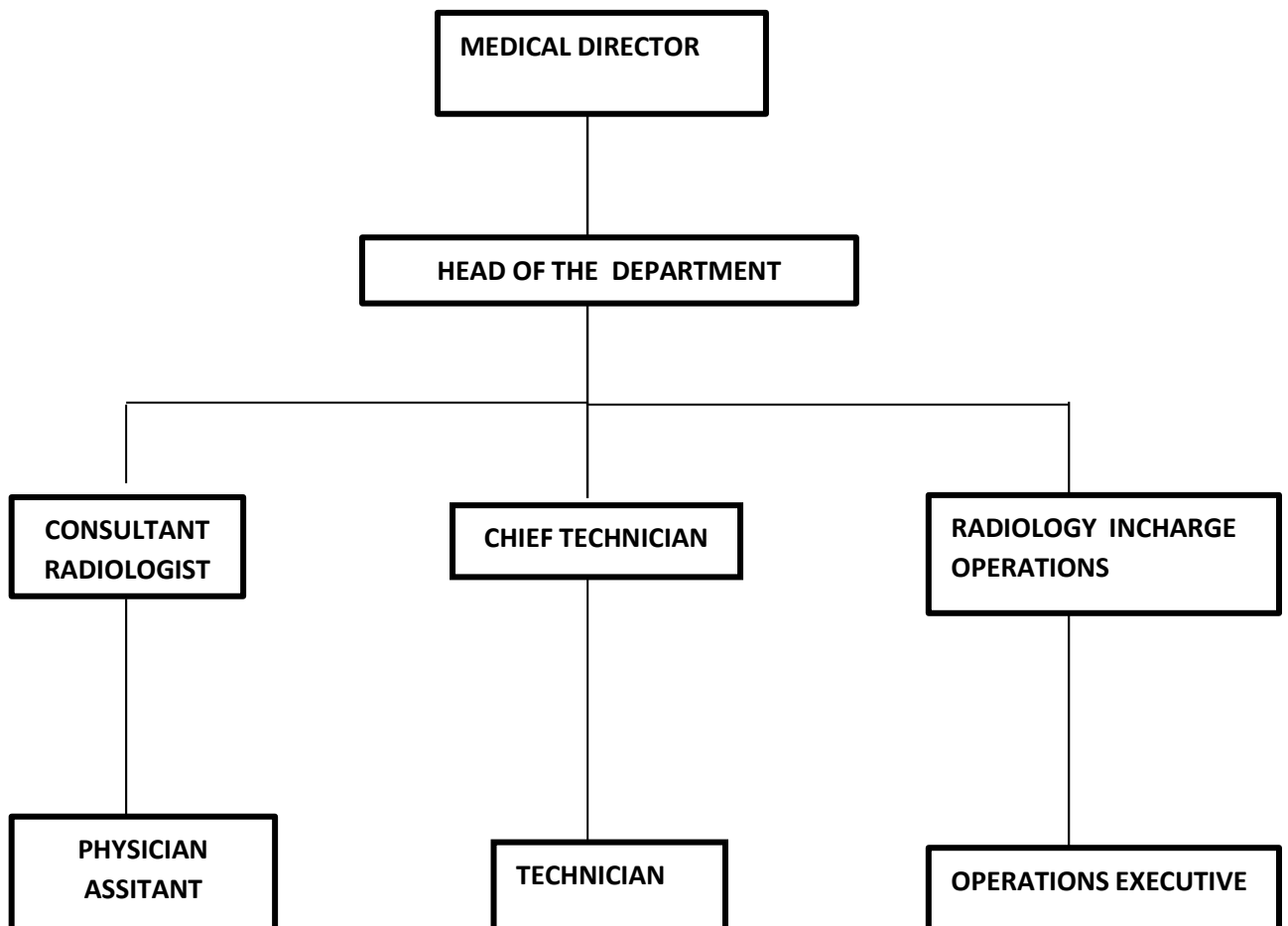
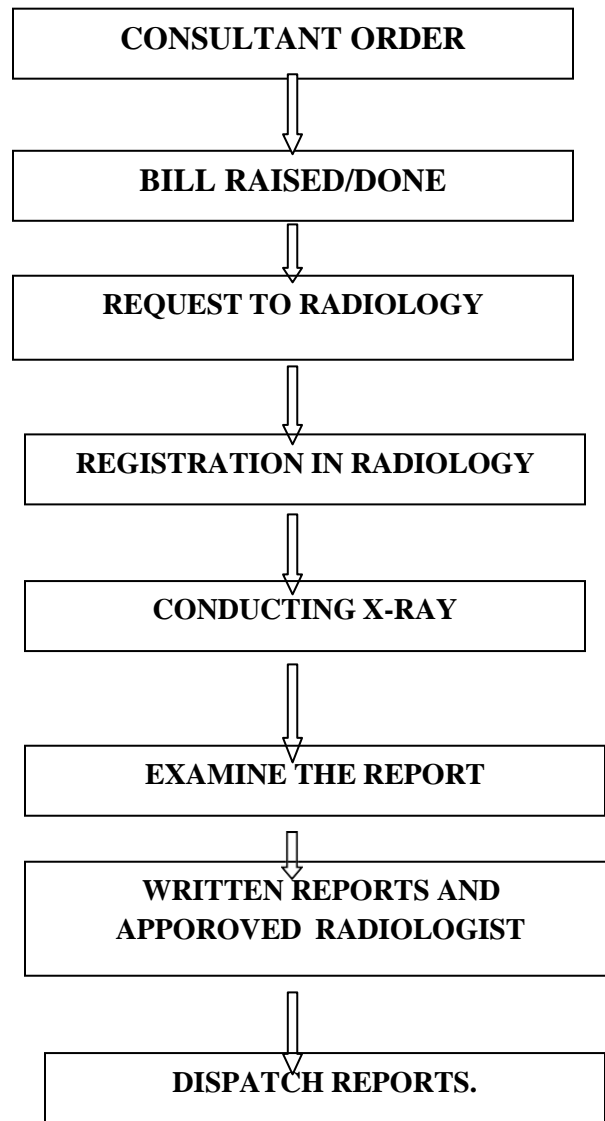


Figure: 2

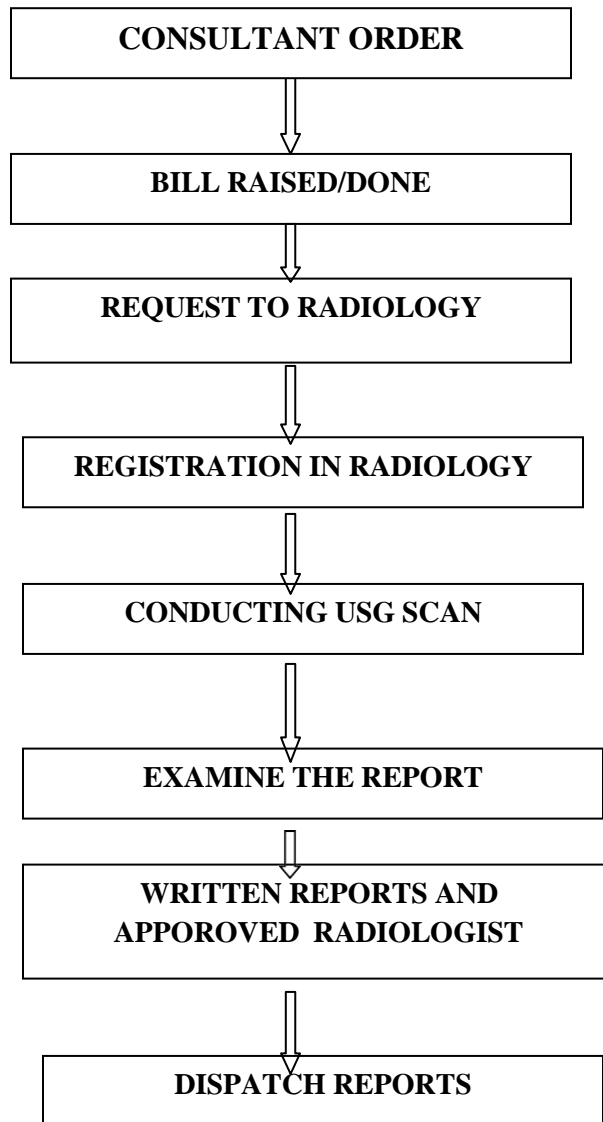
x-ray process flow:

Figure: 3



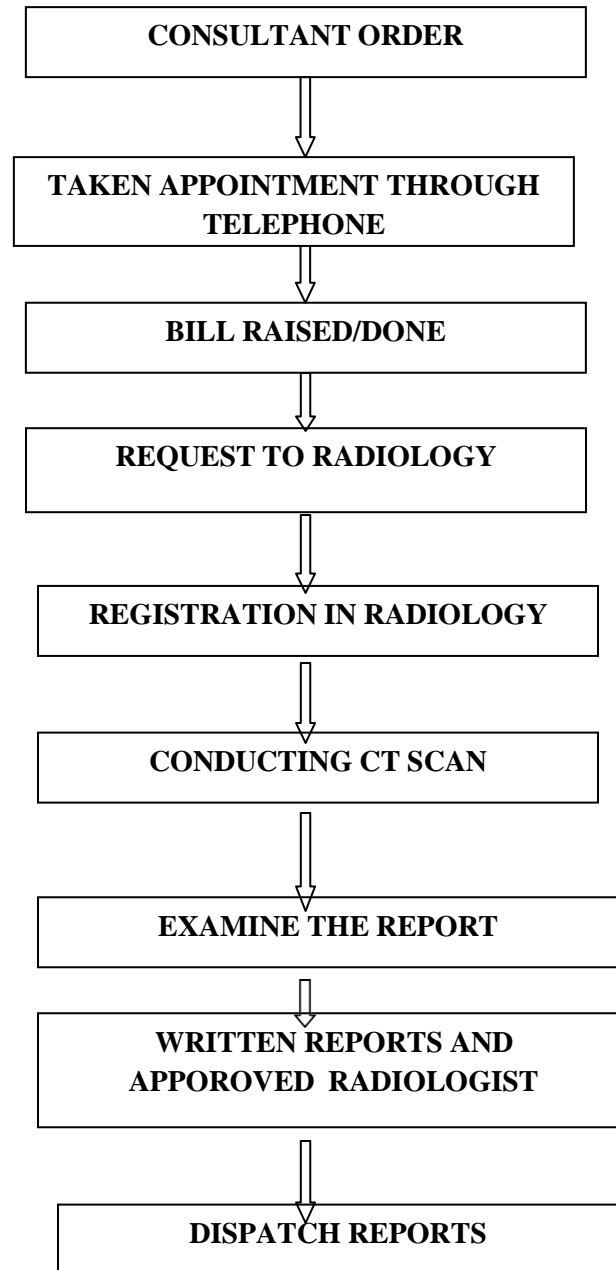
USG PROCESS FLOW :

Figure: 4



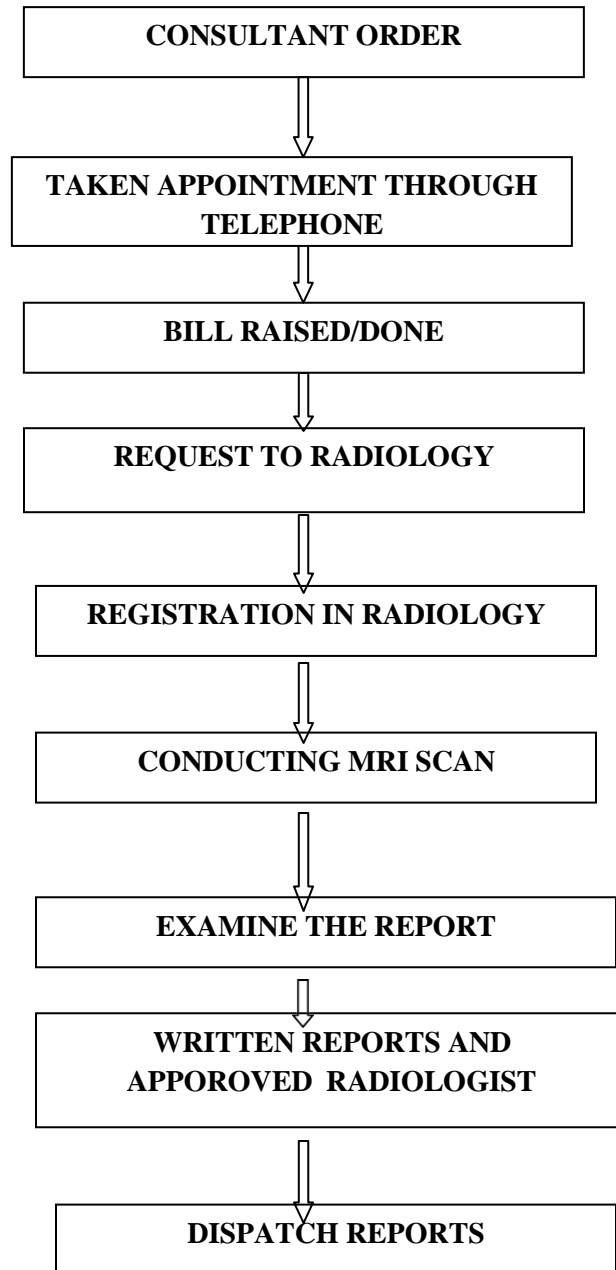
CT SCAN PROCESS FLOW :

Figure: 5



MRI PROCESS FLOW :

Figure : 6



An empirical study to identify the determinants of patient satisfaction, experience and impact of appointment waiting time of radiology department

AIM

- ❖ Study the existing process flow and time motion analysis of all processes in radiology department (X ray, MRI, CT, US).
- ❖ To study and Assess patient satisfaction towards radiological services and associated factors in radiology department

OBJECTIVES

- To find the average time spent in the Radiology Department at each step (TATs) and to identify the factors that affect waiting time
- To investigate the operational problems that may lead to excessive patients' waiting time in radiology department.
- To examine the determinants of patient satisfaction index with imaging services being provided by the healthcare provider with an emphasis on the service provided, waiting time and service time to find root cause of patient satisfaction issues in radiology service.

SIGNIFICANCE OF RESEARCH

This research will help in resolving many problems related to waiting time. It would also help to understand each and every process of Patient Flow in Radiology Department and thus would also be helpful in identifying the delays at specific points. It would give the various causes about waiting time in the Radiology Department. This study would ensure appropriate usage of Radiology health resources / equipments , which can be of great value for the benefit of providing Quality Health care services in the Hospital.

CHAPTER – II

REVIEW OF LITERATURE

This refers to an extensive through and systematic examination of publication relevant to the research project it is an essential part of every research project for many reasons.

Review of literature is the important source for development of research project it helps to gain insight into the research problem and provides information of what has been to be familiar with the existing studies and also provides basic for methodology tool for data collection and research designs.

MATERIALS AND METHODS

The current article is a literature review aimed at finding and identifying management solutions to observed problems in the field of radiology. It is fundamental research because, by its nature, it is aimed at producing knowledge useful for the development of science rather than for practical purposes. The question is approached qualitatively as the research focuses on "the domains of meaning, reason, aspirations, beliefs, values and attitudes". This approach is also descriptive, as researchers tend to analyze data inductively. In view of its objectives, this study is exploratory with the following objectives. To raise the investigator's awareness of a particular setting, fact, or phenomenon for future further investigation, or for revising or clarifying concepts." For technical procedures, the search is a literature search. A literature review is defined as an investigation that integrates previously published research to draw conclusions about a topic of interest. The purpose of such research is to "put the researcher in direct contact with everything written, said or filmed about a particular subject." Therefore, "this is not a mere repetition of what has been said or written before [...] issues under a new focus or approach to achieving the innovative

Waiting Times and Appointment Scheduling Issues provides an analysis of the 3 We focus on one issue: Naming conventions – Know your environment, consider potential absences, service time variability, patient numbers, and the time required to complete the procedure. BC Patient Classification - Create schedules based on patient characteristics and visit times. For example: Is the patient new or returning? What procedure is the patient undergoing (how long does this procedure take?) What is the age range of the patient? Does the patient have a disability that may affect examination time? c. Appointment Coordination (Due to No-Show) - Due to the reality of patient absences, the service will contact the patient in advance to confirm the appointment. Recommended. Please test them. In order to better manage waiting lists, we recommend that you keep other patient names, phone numbers and preferred times on such lists.

Services and their staff should consider the timeliness of service delivery and the accuracy of performing

procedures to avoid repetition and waste of time and money.

DEFINITIONS

Waiting time:

Patients' waiting time is defined as “the length of time from the patient registration in the Radiology department till the patient is inside the investigation room”.

Turn Around Time:-

Period for completing a process cycle (such as repair or replacement of a component or equipment), commonly expressed as an average of previous such periods.

CHAPTER III

METHODOLOGY

This chapter deals with methodology adopted for the study which include research approach, setting of the study. Population, sampling techniques, sample and criteria for sample selection method of data collection.

RESEARCH PLAN

TYPE OF STUDY: Cross sectional study

STUDY AREA: All the subjects were collected from the Radiology Department of CARE Hospital, Hyderabad.

STUDY INSTRUMENT: In This study we used google form as a tool for survey of patient satisfaction and are analyzed further in the MS Excel Software.

And for time motion brief Template is used in the study as a Data Collection Tool by the Investigator and the different Data Points of each Patient during the entire flow of Patient in the Radiology department are documented in the Template and are analyzed further in the MS Excel Software.

SAMPLING METHOD: Random sampling technique used in those clients who came to radiology department for test and screening, both OP & IP.

SAMPLE SIZE : Total Sample Size is 100 units

X- RAY : 25 units

USG : 25 units

CT : 25 units

MRI : 25 units

CALCULATION OF SAMPLE SIZE:

Retrospective Review from Radiology Information System of all patients who presented to Radiology Department of CARE Hospital, Hyderabad. During the month of February 2022 total number of Patients presented to the Department in the month of march was calculated and an appropriate Sample Size of 100 subjects were selected for the study .

START POINT OF PROCESS:

Time when the patient arrives the Radiology Department of CARE Hospital , Hyderabad.

STOP POINT OF PROCESS:

Time when patient is Checked Out from the Radiology Department of CARE Hospital , Hyderabad.

SURVEY :

After getting the report from the respective department patients were asked to fill the questionnaire form and give feedbacks regarding the visit in radiology department.

RESEARCH DESIGN

The Research would show the application of certain quality tools such as Process Flow Diagrams, Cause & Effect Diagrams , , etc. The research also tries to reason how these tools could be implemented in the Radiology Department. An Exploratory Research study would be used as the best methodology to research the problem of waiting time.

The main focus of exploratory research is idea discovery. In general, researchers spend a significant portion of their work in exploratory research when little is known about the problem being studied. The idea is to clarify concepts and then do more extensive research.

The Research would help to find out different causes of delay , the response times and the patient flows in Radiology . Thus the purpose of an Exploratory Research is to extract new insight into the problem of waiting time. Here the Research study will need to adopt flexibility. This Research will involve Observational Methods , Expert Interviews wherever necessary. These Data Collection methods would be helpful to break the complexity surrounding the Research , thus simplifying the Research.

DATA COLLECTION TECHNIQUES

The Exploratory Design would require certain Data Collection Techniques which would be appropriate to gather information regarding the study.

Data would be collected based on three levels :

1. Throughput Time / Turn Around Time
2. Process Flows and
3. Critical Issues.

The cross- sectional Research study design would require data collection techniques through survey to gather information regarding the patient satisfaction and issues with respect to radiology department

Data Collection methodologies are set for each level. Throughput Time / Turn Around Time is the time from patient arrival into the Radiology Department to the time of Patient Checked Out of the Radiology Department. Data for Throughput Time / Turn Around Time would be recorded on a brief Template using Observational methods.

The Process Flows represents the various processing operations going on in an Observational method would be helpful to gather information of how the Process flows in a sequential order .

The Data for such Critical Issues would be collected through expert Interviews , Direct Observation and primary Data wherever necessary .

SURVEY :

After getting the report from the respective department patients were asked to fill the questionnaire form and give feedbacks regarding the visit in radiology department.

DATA ANALYSIS

After the Data Collection, data was entered in the Microsoft Excel Sheet and the entered Data was analyzed using the Data analysis package of Excel 2010. Data Analysis was done using Statistical Control Tools , Process Flows , Cause and Effect Diagrams. Graphical representation would be shown wherever necessary .

SIGNIFICANCE OF RESEARCH

This Research would be helpful to extract new insight into the problem of waiting time. It would help to understand each and every process of Patient Flow in Radiology Department and thus would also be helpful in identifying the time delays at specific points. It would give the various causes about waiting time in the Radiology Department. This study would ensure appropriate usage of Radiology health resources / equipments , which can be of great value for the benefit of providing Quality Health care services in the Hospital.

CHAPTER-IV

Analysis and Interpretation

Analysis is the process of organizing and synthesizing data to answer research questions and test hypotheses. Interpretation is the process of understanding the results and examining their meaning in the broader context.

-Hour exercise analysis:

The time required to complete each activity was recorded, then the total processing time (in hours) for each patient was calculated, and finally the average time required for each individual processing of the study samples was calculated. Calculated.

- **TAT1= waiting time of patient**
- **TAT2 = procedure/scan time of patient**
- **TAT3= time taken to report**
- **TOTAL TAT= TAT1+TAT2+TAT3**

x-ray :

Process	Observed From sample	Ideal
WAITING TIME	38 minute 8 second	5 minute
PROCEDURE	13 minute 52 second	5 minute to 15 minute
REPORT GENERATION	1 hours 51 minute 53 second	2 hour
ENTRY TO EXIT	2 hour 43 minute 53 second	3 hour

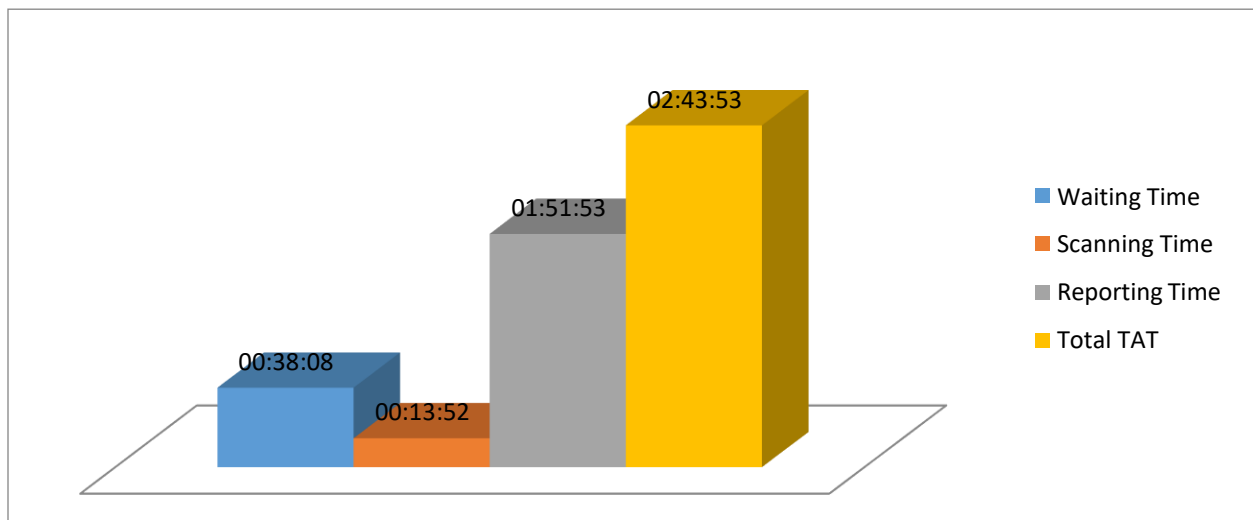


Figure 7

USG :

Process	Observed from sample	Ideal
WAITING TIME	1 hour 4 minute 8 second	10 minute
PROCEDURE	12 minute 2 second	20 minute to 25 minute
REPORT GENERATION	1 hour 12 minute 30 second	2 hour
ENTRY TO EXIT	2 hour 28 minute 40 second	4 hour

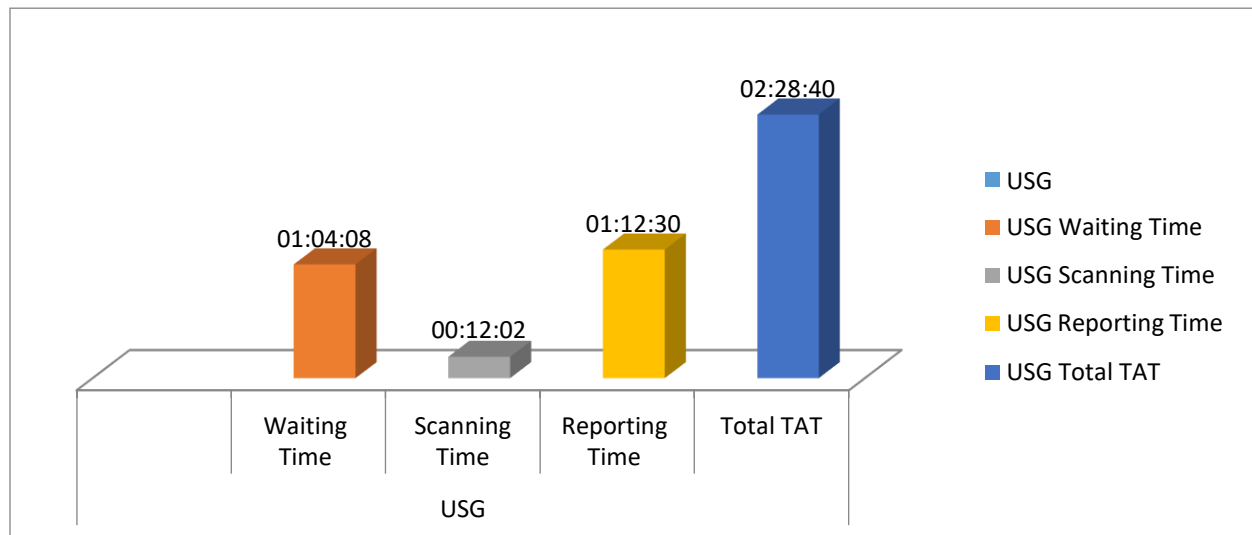


Figure 8

CT SCAN

Process	Observed from Sample	Ideal
REGISTRATION	15minute 34 Second	10 minute
PROCEDURE	45 minute 52 Second	15 minute to 30 minute
FILM GENERATION	20 minute	15 minute
REPORT GENERATION	7 hour 58 minute 43second	4 hour
ENTRY TO EXIT	9 hour 34 minute 23 second	4 hour

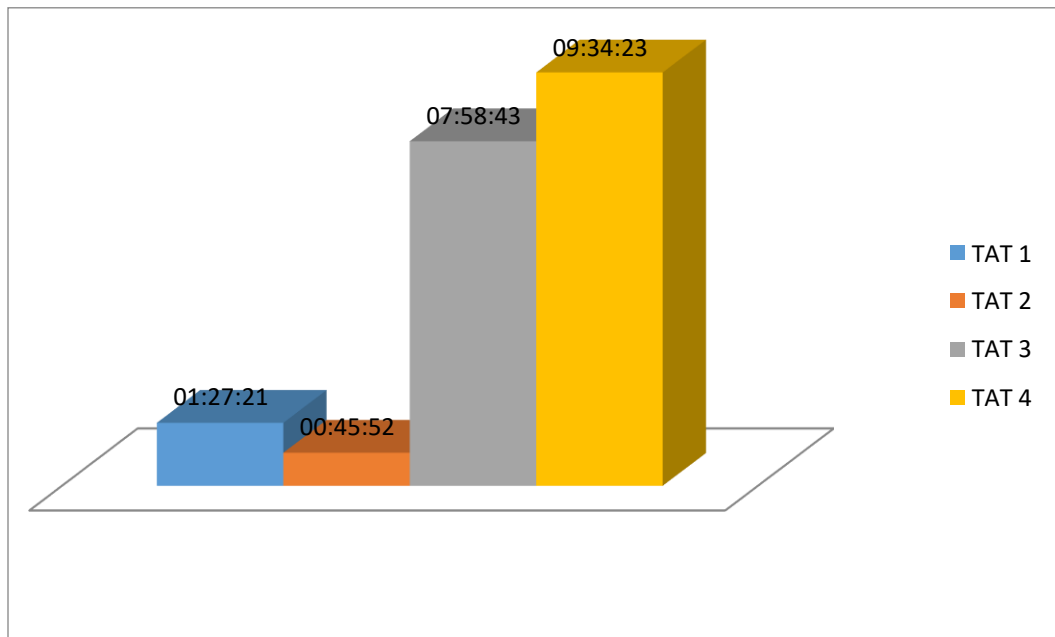


Figure: 9

MRI

Process	Observed from sample	Ideal
REGISTRATION	15 minute 8 second	15 minute
PROCEDURE	45 minute 52 second	20 minute to 1 hour
FILM GENERATION	23minute 45 second	10 minute to 1 hour
REPORT GENERATION	7 hour 45 minute 43 second	4 hour
ENTRY TO EXIT	9 hour 2 minute 23 second	6 hour

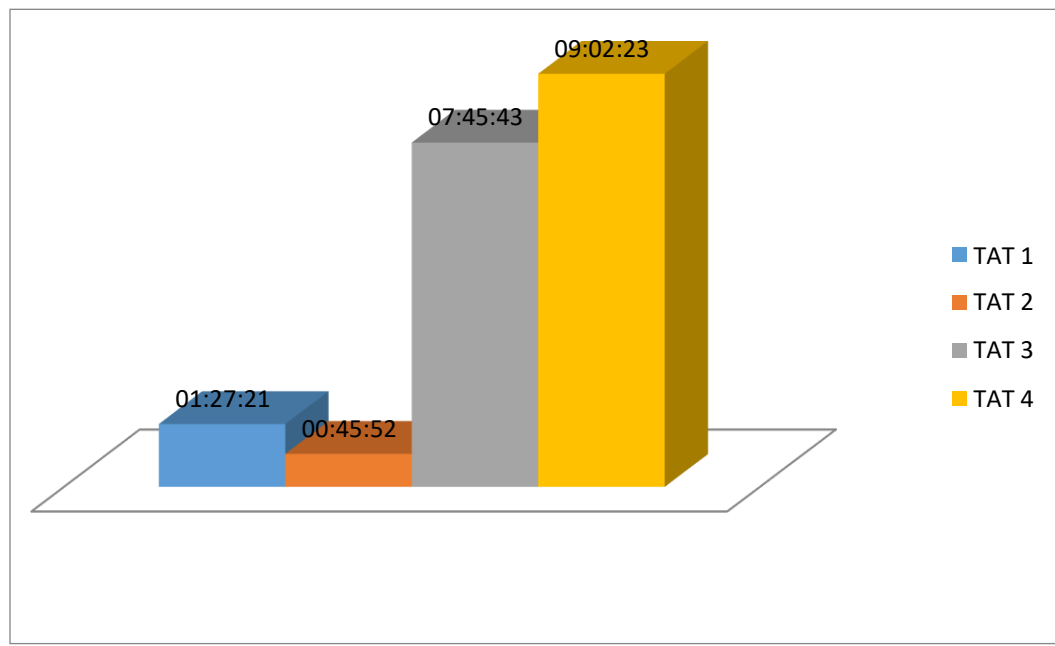
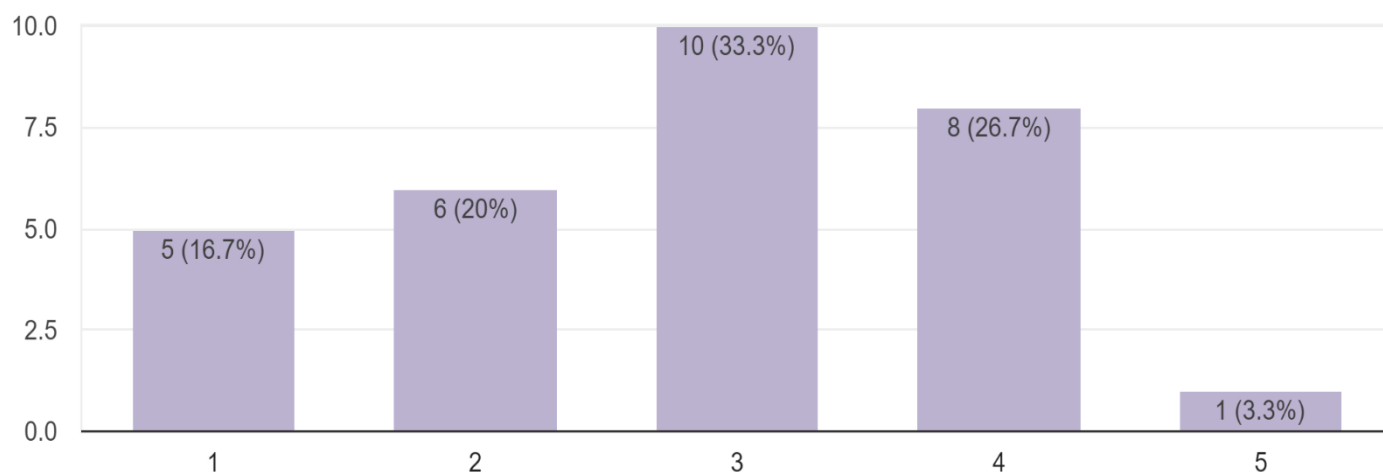


Figure 10

Analysis and interpretation from the survey

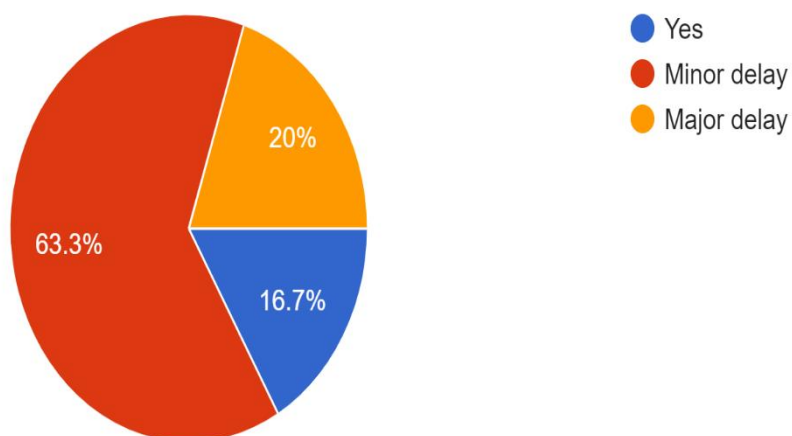
How satisfied were you with the waiting time for the provided test/scan appointment

30 responses



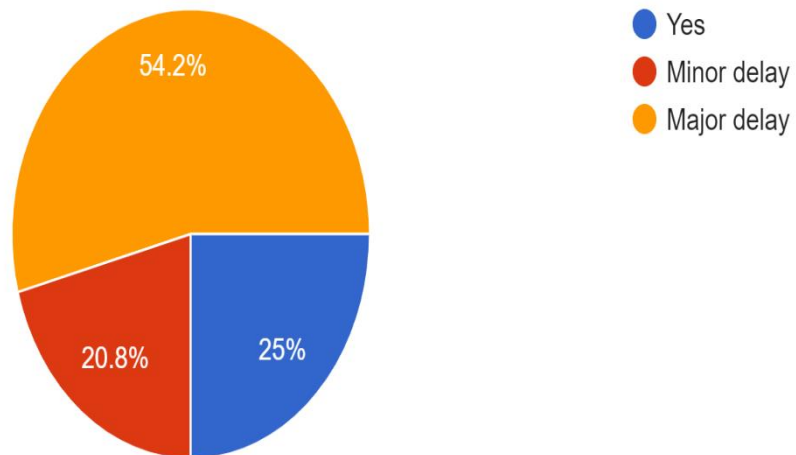
Was your test/scan appointment performed on time?

30 responses



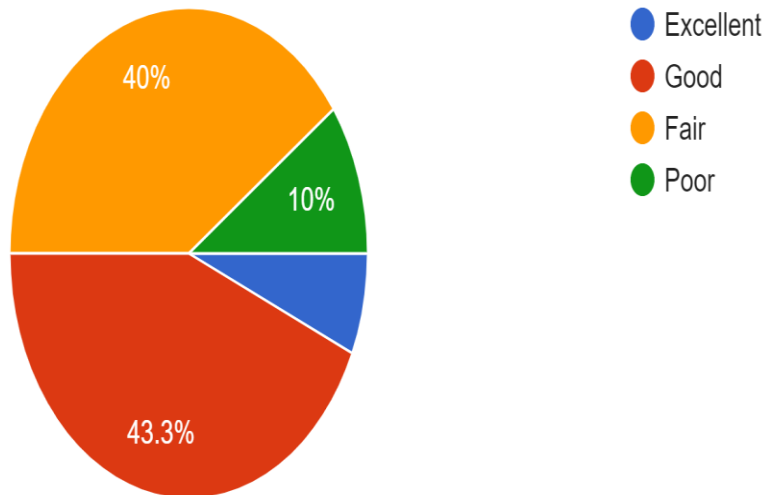
Did you get your test/scan report on time?

24 responses



What was your overall impression of the service provided by our radiology department?

30 responses



CHAPTER - V

FINDINGS AND SUGGESTION

Findings:

1. Average daily outpatient arrival :

The total number of patient flow per day varies for all modalities like this

X ray : 100-120,

USG : 40-80,

CT SCAN : 20-25,

MRI : 15-18.0

Inference:

- Radiology department of any hospital is one of the biggest revenue generating department so this is the average number of patient flow in radiology department in CARE Hospital.
- From this graph we can see that X ray department is having highest number of outpatients followed by USG, then CT scan and MRI.

2. Average daily outpatient arrival pattern:

Following are the arrival pattern in each of the departments ,from this it can be easily inferred that the patient flow is maximum during 9am-1 pm and gradually decreases as the day passes by and the rush is maximum on Saturday due to maximum number of corporate patients

Major causes of delay in process:

Registration

- ☐ Lack of training to the newly joined staff
- ☐ System slow down
- ☐ Multiple queries by patients and on call appointment in between registration
- ☐ Language difference between patients and staffs.
- ☐ Procedure explanation and sometimes counseling of the patients before the procedure.
- ☐ Proper coordinator between patients and procedure rooms so they have to coordinate sometimes.

Procedure

- ☐ Consultants unavailable for the USG procedure room.
- ☐ Consultants busy in reporting.
- ☐ Late arrival of consultants at morning .
- ☐ One patient having so many tests.
- ☐ System break down
- ☐ Patients not arriving in time.
- ☐ No proper preparation of the procedures.
- ☐ Lack of SUPPORT staffs.

REPORT VERIFICATION AND GENERATION

- ☐ Reports doesn't come in time for typing after the scan.
- ☐ System slowdown.
- ☐ Report incomplete from the consultants
- ☐ Late reporting and verification by the consultants.
- ☐ Sometimes films not printed even after reports are ready.

RECOMMENDATIONS TO IMPROVE PROCESSES:

Recommendations to improve Registration:

- ☐ Training of newly appointed staff-to avoid in duplication of work
- ☐ System back up.
- ☐ Separate Staff for on call appointments.
- ☐ Proper signage and brochures to guide patient regarding procedures .
- ☐ Proper queuing of the patients.
- ☐ Separate reception for CT and MRI.
- ☐ Only one attendant should be allowed with the patient in the waiting area.

➤ Recommendations to improve Procedure:

- ☐ MRI and CT with contrast should be done in fixed time.
- ☐ Inpatients and emergency patient having separate rooms .
- ☐ All equipments should be functional.
- ☐ There should be prior history of the patient in the prescription to fasten the scan
- ☐ Some consultants duty should be in the procedure room for the whole day.
- ☐ Inpatients should be allotted separate timing for the procedures.

++++++Recommendations to Improve report generation Process:

- Reports to be verified then and there after finishing the scan.
- One system along with one typist should be there in each scan room.
- Reporting time should be fixed for different modalities.
- Reporting should be done by the consultants directly rather than typist to avoid duplication of work.
- Patients should be well informed by SMS after reports getting ready .

REASON FOR OUT PATIENT WAITING TIME : X RAY

CAUSE & EFFECT DIAGRAM

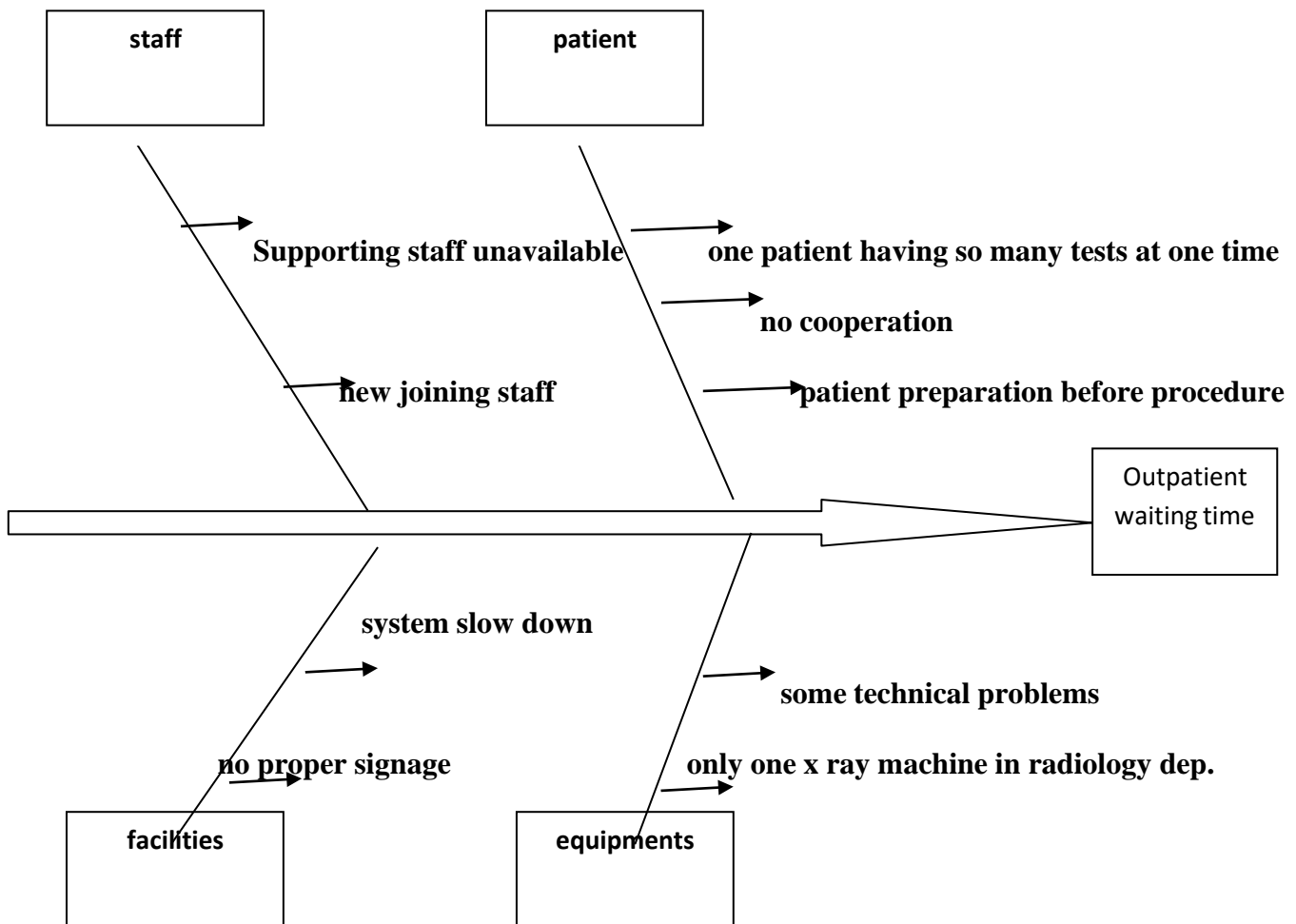


Figure :11

Recommendation to decrease waiting time in x ray

- ☐ **Reception:** Training to the reception staff to make registration early especially to the newly joined staffs.
- ☐ System engineer should be there available every time to avoid system slowness problem.
- ☐ Coordination between radiographers and receptionist.
- ☐ Receptionist should mention arrival time for each and every patient.

Procedure:

- ☐ Patients having several X Rays should be allotted to special rooms.
- ☐ IP and emergency patients should be allotted to separate rooms.
- ☐ In time and out time should be mentioned in the system.

Infrastructure:

- ☐ Digital x ray should be made available..
- ☐ Good infrastructure and ambience needed to enhance patient flow.
- ☐ Large waiting area to accommodate patients especially weekends.

Reasons for outpatient waiting time: USG

CAUSE & EFFECT DIAGRAM

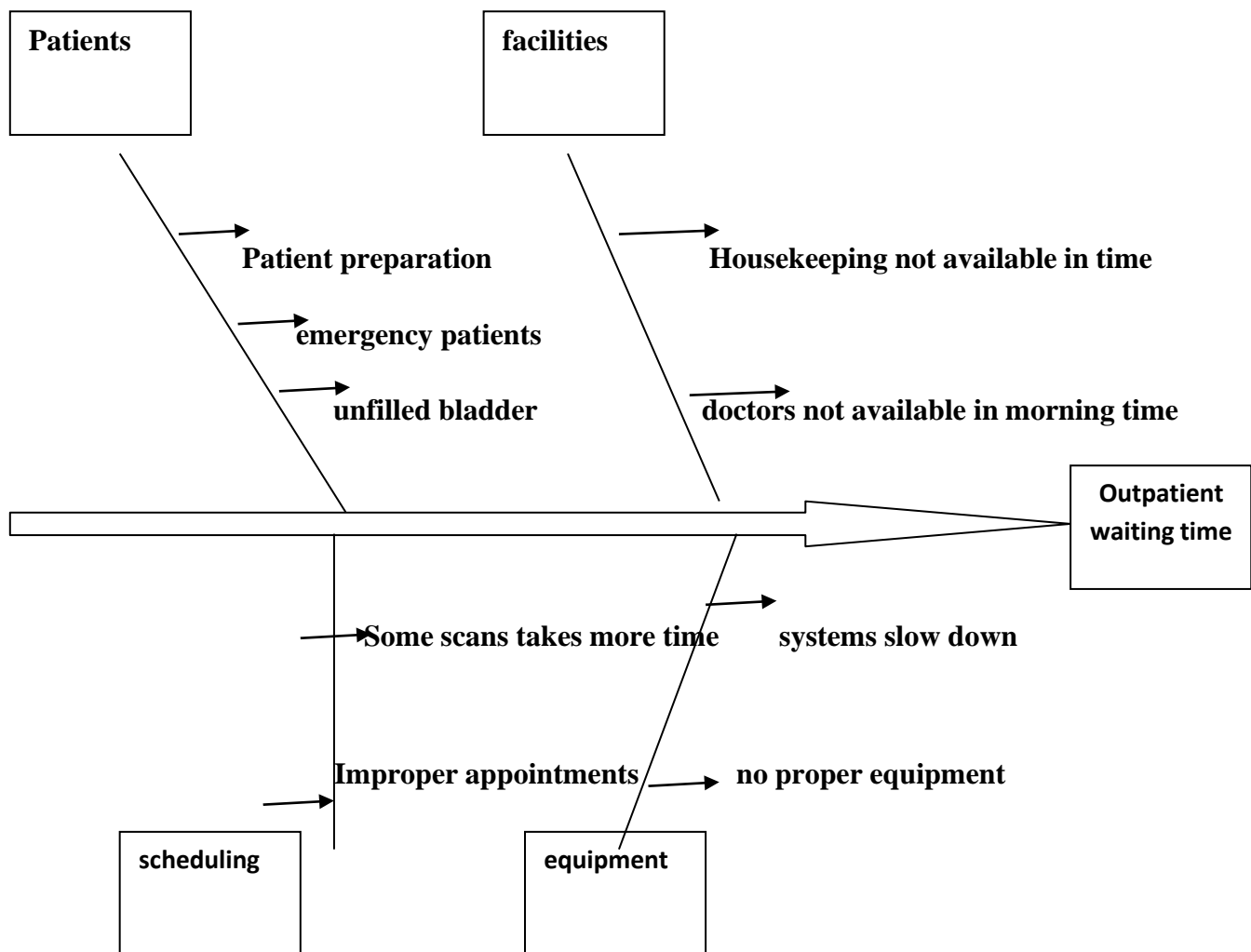


Figure :12

Recommendations to decrease waiting time :USG

AT RECEPTION:

- ☐ Training to PCC to give appointment time to every patient in the system.
- ☐ Proper counseling to patients regarding the procedure preparation(full bladder).
- ☐ Patient having appointments can be informed through SMS just before the procedure .

INFRASTRUCTURE:

- ☐ Separate Doppler room in the department.
- ☐ USG and Doppler should be in different modalities.
- ☐ There should be special room and timing for health check and ip patients.

CONSULTATION:

- ☐ Consultant duty should be allotted in USG room for whole day.
- ☐ Consultation time should be fixed for certain procedures.
- ☐ Consultant should be available for final verification of the test

- *Reasons for outpatient waiting time: CT SCAN*

cause & effect diagram

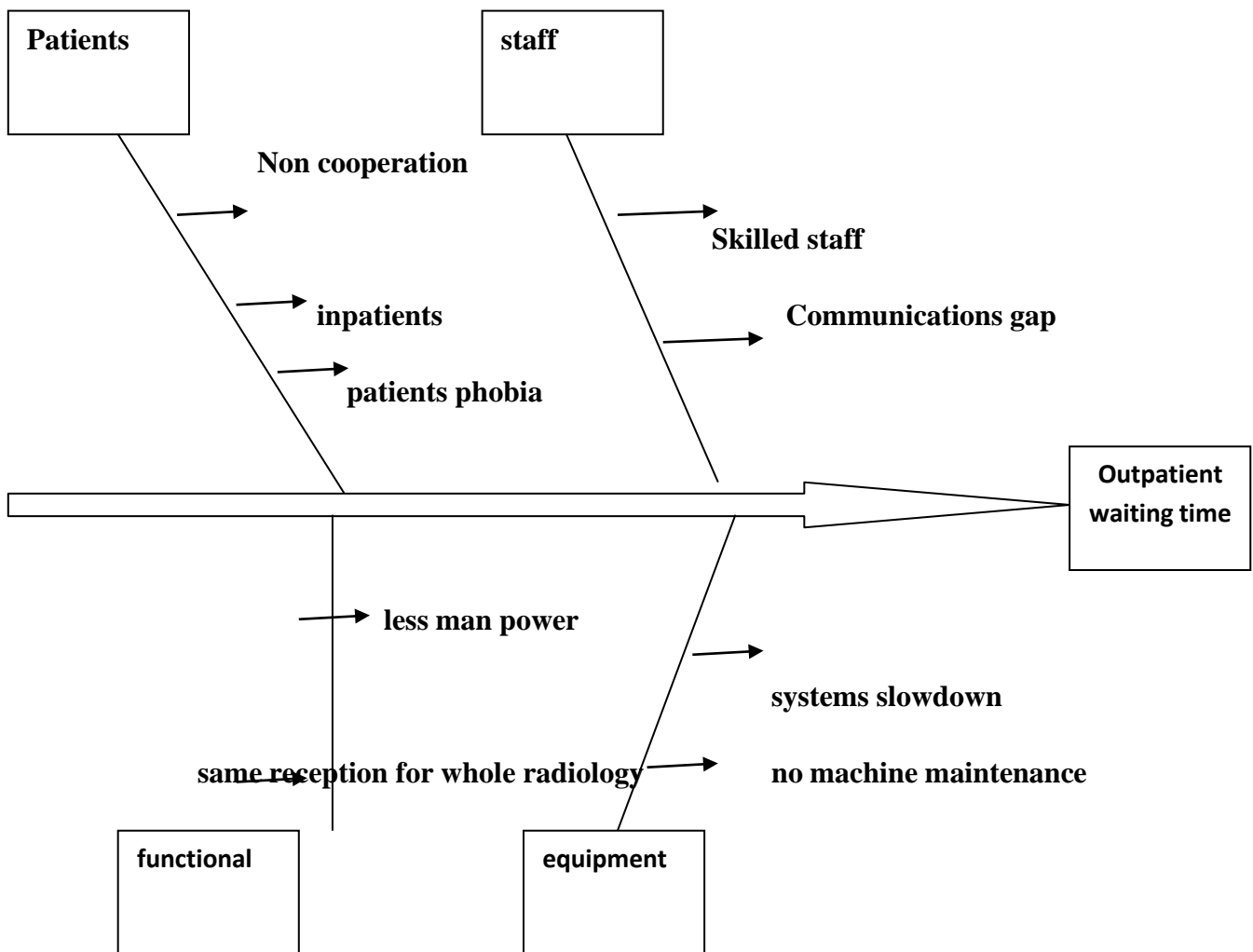


Figure : 13

Recommendations to decrease waiting time : CT scan

Reception :

- ☐ Separate reception counter for CT scan .
- ☐ Proper guidelines in written format at the registration counter.
- ☐ One patient and one attendant only be made mandatory for CT Scan .

Infrastructure:

- ☐ Maintenance of the CT machine frequently.
- ☐ Inpatients and outpatients can have separate timing.
- ☐ Separate timing for CT studies and procedure .

Consultation:

- ☐ Consultant should be in duty in ct room for the whole day(separate schedule for reporting any procedure).
- ☐ Expanded hours of coverage .

Reason for outpatient waiting time : MRI scan

cause & effect diagram

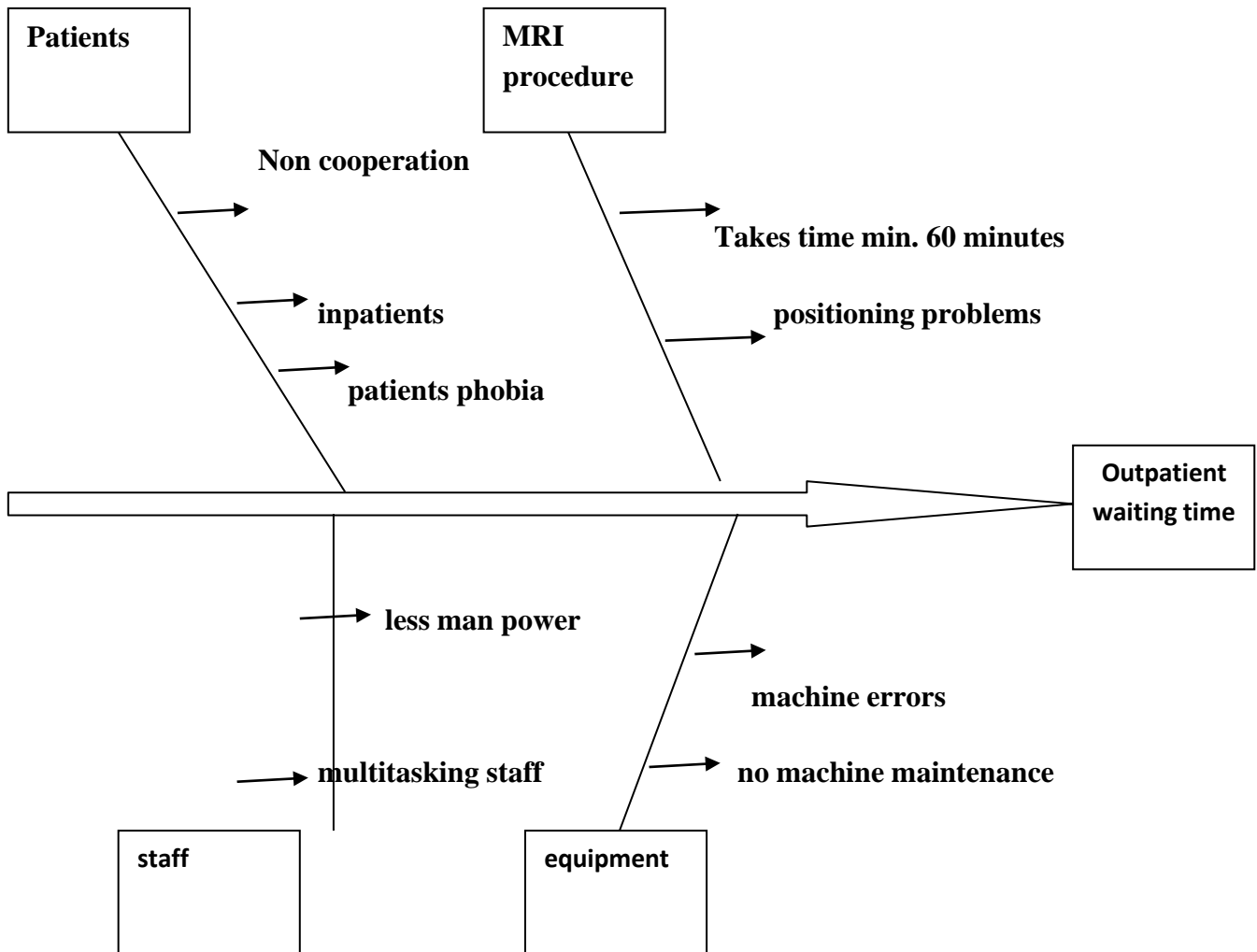


Figure: 11

Recommendations to decrease waiting time in MRI

- ☐ Separate reception counter
- ☐ Re-design block schedule
- ☐ Maintenance of the machines.
- ☐ Practice breath holding before the procedure.
- ☐ Patient attendant should be available.
- ☐ Inpatients and outpatients can have separate timing.
- ☐ Train Centralized Scheduling to: remind patient to go to lab before procedure (in case of contrast) remind patients by SMS before the appointment time.
- ☐ Patient should be well informed regarding the procedure.

CHAPTER - VI

CONCLUSION

Radiology is one of the most crucial departments for any hospital, as it is one of the revenue generating departments.

The Radiology department in CARE Hospital has the largest flow of patient after emergency and op departments.

The recommendations provided in the Report are focused at increasing the process efficiency which ultimately leads to enhancing Patient Satisfaction.

As brought out through study after analyzing the data collected through Sampling in CARE Hospital, things observed are:

- ▶ There are many factors that affect the Outpatient waiting time of the hospital, which ultimately leads to patient dissatisfaction. We have to remember a small factor can make a big difference.
- ▶ Identification of these factors requires a multidimensional study and this is possible by streamlining the existing process only.
- ▶ Identifying the areas of improvement will help the hospital to improve in those processes , and finally it will directly help to increase the revenue of the hospital.

Therefore, it can be concluded that there is room for improvement in the radiology department of CARE Hospital and minimizing certain wastes in some respects can make the process more efficient and faster. increase. So if the booking process can be sped up and small changes like coordinated work and good and timely communication can help improve the quality of the whole process and ensure patient satisfaction. I've made some suggestions that you may find helpful. Radiology services exist for their customers, so user satisfaction must be a priority. When seeking remedies, the service should know the problems and their causes, and use that knowledge to develop measures to resolve these problems. Surveys of customers, external and internal markets (benchmarks) and service employees, among others, can be used for this purpose. Literature research is an important tool for getting an overview of a topic when looking for problems and solutions. However, due to the small number of articles dealing with management in the field of radiology, conduct on-site case studies on the diagnostic radiology market, management practices (commercial, financial, and human resources), management models, and learning tools. is important. More extensive data on the subject. Among the various proposals for research to be carried out are: Conducting ongoing training in radiology services. survey of in-service executive profiles; identification of tools used in service management; and identification of challenges faced by in-service managers. Defines how the interaction between radiologists and other professionals in the field takes place. Defining how people are managed in diagnostic radiology services. Knowledge of radiological problems is as important as finding solutions to such problems. However, we need to know how to not only collect data, information and tools, but also implement the changes necessary for organizational development.

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Staff (Doctors, technicians and PCCS) Duty rotation/scheduling should be modified like for doctors one consultant doctor should be available for US room all the time and fixed reporting time should be fixed for all doctors.

- ▮ OPD timing for US should be 7am-7 pm to accommodate more patients.
- ▮ Multidisciplinary team work is the key to improve coordination between staffs.
- ▮ Consultants, resident doctors, nurses, patients and supporting staffs should be actively involved in each and every steps of their duty to fasten the process.
- ▮ Timing and manpower should be continually updated and improved and all the concerned departments should be made aware of the latest updates. Patients should be fully informed about the steps he supposed to go to get the test done . There should be proper SIGNAGES like(ONE PATIENT AND ONE ATTENDENT)To avoid overcrowding at the registration COUNTER.
- ▮ The newly appointed the customer care facilitators should be trained in typing and made familiarized with medical terminology to minimize errors in typing the summary.
- ▮ Management should take steps to ensure that ward boys or housekeeping personnel are present when required to transport inpatient to avoid overcrowding of patients in the waiting area.
- ▮ There should be back up system for computers in the typing department so that if one system is out of order the work is not hampered and report preparation is not delayed.

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