Summer Training at

Healthcare Global Enterprise, Jaipur

From 11-05-2021 to 02-07-2021

- **A study on average waiting time in OPD (patient satisfaction)**
- **A study on Turn Around Time in Diagnostic Radiology**

By

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MBA in Health & Hospital Management

(2020-22)

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HCG The Specialist in Cancer Care
adding life to years

HCG/HHJ/HR/536/2021-22

Dated: 07/07/2021

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.Biswajit Kumar Jena S/O Mr.Binod Behari Jena**, a student of **IIHMR University Jaipur** and pursuing two years' full time **Master's in Business Administration (MBA in Hospital and Health Management)** successfully completed **54 Days (From 11th May, 2021 to 03rd July, 2021)** long internship program at **HCG Cancer Centre-Jaipur (A Unit of Healthcare Global Enterprises Ltd.)**.

During the period of his internship program with us he was found, to be very punctual & hardworking and inquisitive to learn new things.

We wish her every success in life.

For HCG Cancer Centre-Jaipur
(A Unit of Healthcare Global Enterprises Ltd.)

Jeetsingh Chavan
Head - HR
HCG Cancer Centre Jaipur

HealthCare Global Enterprises Ltd.

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ACKNOWLDGEMENT

I would like to show my warm gratitude to my parents, Mr. Binod Behari Jena & Mrs. Bandana Jena, they are the one who give their everything to me to reach here.

I am also thankful to my institution IIHMR University to giving me this kind of platform to be a part of this organisation and help me to get great exposure.

I would like to express my sincere appreciation to my respected teacher, my mentor Dr. Alok Kumar Mathur. Who has the substance of a genius, he convincingly target-hunting and inspired me to be skilled and do the correct factor even once the road got tough. While not his persistent help, the goal of this project wouldn't be realized.

I would like to express my great appreciation to Dr. Mitali Mathur for her valuable and constructive suggestions throughout my working days also in designing and development of this analysis work. Her temperament to relinquish her time therefore munificently has been greatly appreciated.

I am very grateful to Mr. Jeetsingh Chavan & Mr. Manish Sinha for giving me opportunity to work in this organisation and help me to develop my research project.

TABLE OF CONTENTS

ACRONYMS/ABBREVIATIONS

OPD	**Outpatient Department**
IPD	**In patient Department**
TPA	**Third Party administration**
IPD	**Inpatient Department**
NABH	**National Accreditation Board for Hospitals & Healthcare Providers**
TAT	**Turn Around Time**
USG	**Ultrasound**
MRI	**Magnetic Resonance Imaging**
PET-CT	**Positron Emission Tomography**

ORGANIZATIONAL PROFILE

Introduction

Healthcare Global Enterprise, Jaipur has contemporary technology, with patients having access to all the most recent in cancer therapy, research, and technology. Healthcare Global Enterprise, Jaipur has an incorporated tactic to cancer care delivery. It is a blend of skilled and professional team of professionals, along with most developed technologies, that safeguard patients obtain the right care and treatment for cancer. Patients have access to a full scope of cancer care - from restraint, assessment, designation and treatment to convalescence and supportive/palliative care.

The diagnostic facility at aid international Enterprise, Jaipur may be armed with a recent imaging technology, popularly referred to as PET-CT , a nuclear imaging procedure - that is a distinctive combination of metabolic and purposeful imaging (PET part) in conjunction with structural info (CT part). PET-CT scan helps in early detection of neoplasm cells with utmost sensitivity and accuracy. A PET-CT scan is required at each step of cancer care treatment, ranging from early diagnosis to staging, treatment response analysis and assessment of early recurrence.

The modalities of cancer treatment offered at aid international Enterprise Jaipur are medical, surgical and radiation medicine. The medical oncology unit includes Adjuvant therapy, Neo-Adjuvant Chemotherapy, Palliative Chemotherapy and Targeted Chemotherapy. The Surgical department is fully-equipped to perform surgeries like radical Head and Neck surgery, Micro–Vascular Surgery with Reconstruction, optical maser Surgery, Gynae Cancer Surgery, Colon–Rectal Surgery, Laparoscopic Cancer Surgery, Gastro–Intestinal Cancer Surgery, carcinoma Surgery & Reconstruction and Urological/Prostrate Cancer Surgery.

The radiation department is equipped up to date skills comparable to very important Beam (Varian) fashionable linac, Linear Accelerator with 3D-CRT), Image radio-controlled Radio Therapy, fast Arc Therapy, Stereotactic Body Therapy, Stereotactic therapy, and Radiosurgery facility. The Pathology Services give a comprehensive biochemistry, pathology, histopathology, biology with in-house CT scan and ultra-modern day-care unit.

Hospitals in India

- Healthcare Global Enterprise, Jaipur
- Healthcare Global Enterprise, Bangalore
- Healthcare Global Enterprise, Ahmedabad
- Healthcare Global Enterprise, Hubli
- Healthcare Global Enterprise, Vijayvada

- Healthcare Global Enterprise, Nasik
- Healthcare Global Enterprise, Ranchi
- Healthcare Global Enterprise, Shimoga
- Healthcare Global Enterprise, Trichy
- Healthcare Global Enterprise, Vadodra
- Healthcare Global Enterprise, Vishakhapatnam

HEALTHCARE GLOBAL ENTERPEISE, JAIPUR

At Rajasthan health care world Enterprise, Jaipur, are the sole comprehensive cancer care centre with all the facilities underneath one roof. It provides ultra-modern cancer medical care to any or all our patients with technology backed by research.

Healthcare Global Enterprise guarantee to deliver cancer care with the team of versatile & expert specialties and professionals, alongside an integrated approach and right treatment. So, our patients get access of an entire cancer care from restraint, assessment, identification, and treatment to healing and supportive/palliative care.

Fact-finding facility at Jaipur is provided with a newest nuclear imaging procedure- PET-CT, that is an exclusive combination of metabolic and practical imaging (PET part) alongside structural info (CT part).

We provide Medical, Surgical and Radiation medicine Services-

Medical Oncology

- Adjuvant Chemotherapy
- Neoadjuvant Chemotherapy
- Palliative Chemotherapy
- Targeted Chemotherapy

Surgical Department

- Radical Head and Neck Surgery
- Microvascular Surgery with Reconstruction
- Laser Surgery
- Gynae Cancer Surgery
- Laparoscopic Cancer Surgery
- Gastro-Intestinal Cancer Surgery
- Breast Cancer Surgery & Reconstruction
- Urological/Prostrate Cancer Surgery

Radiation Department

- VitalBeam Modern Linear Accelerator
- Linear Accelerator with 3D-CRT
- Image Guided Radio Therapy (IGRT)
- RapidArc Therapy (SBRT)
- Stereotactic Radiation and Radiosurgery (SRT & SRS) facility.
- HDR Brachytherapy
- Interstitial Implants and Computerized Treatment Plan
- RPM Gating

Salient Features

- Providing comprehensive cancer care with the most advance radiation oncology.
- 10 dedicated bed for Born marrow transplant unit with stringent & infection control practices.
- Dedicated intensive care unit along with equipped accident & trauma care centre.

Quality commitment of HCG

- Development and strengthening of policies and protocols.
- Ethical medical practices.
- Protection of patient rights.
- Measures for patient satisfaction.

Principles

- **Quality**

  Empowering patients to live longer and healthier lives.

- **Integrity**

  To be honest and forthright in all dealings and to be accountable commercial citizens in the society.

- **Innovations**

  To endeavour to find advanced ways to develop patient care and deliver value to them.

- **Collaboration**

  To explore the limitless possibilities of collaborative energy and teamwork.

- **Leadership**

  To be the best, as individuals and as a company.

Vision

Adding life to years by redefining healthcare through global innovation.

Mission

To be an acclaimed healthcare institution in pursuit of medical excellence through value base medicine.

This hospital is accredited by: NABH

OBSERVATIONAL LEARNING

During my summer internship at Healthcare Global Enterprise, Jaipur there were numerous learning experiences these were enhance due to the projects undertaken at the hospital, which are listed below :

- **A study on average OPD timing at Healthcare Global Enterprise, Jaipur**
- **A study on Turn Around Time in Diagnostic Radiology**

A brief report of the internship of 8 weeks is presented below with all the details of tasks undertaken and learning during my internship.

Lower Basement

- Radiation Therapy

Basement

- Parking
- Canteen
- Nuclear Medicine
- Module Room
- TPS Room
- CIOD
- IT
- Human Resource
- Finance
- Sales & Marketing
- Medical Record Department
- Store

Ground Floor

- Cafeteria
- Pharmacy
- Reception
- Patient admin area
- Emergency
- OPD billing area
- Dialysis
- Training room

- Dental department
- Pathology
- Consultation Rooms.
- Radiology
- IPD billing

1st Floor

- OT
- ICU
- Clinical Laboratory

2nd Floor

- Day care ward (for chemotherapy)

3rd Floor

- Medical surgical ward

4th Floor

- Medical surgical ward

5th Floor

- Medical surgical ward

Scope of Services

Clinical Services

- Anesthesiology
- Arthroscopy & Sports Medicine
- Critical Care Medicine
- Internal Medicine
- Medical Oncology
- Nuclear Medicine
- Orthopedics Including (Joint Replacement Surgery)
- Radiation Oncology
- Surgical Oncology

- Urology

Allied Services (In-House)

- Blood Transfusion Services
- Clinical Psychology
- Dietetics
- Canteen

Allied Services (Outsourced)

- Ambulance
- Blood Bank
- Dentistry
- Physiotherapy

Diagnostics Services

Imaging Services

- 2 D Echo
- CT Scan
- MRI
- PET-CT
- Ultrasonography
- X-Ray

Laboratory Services

- Clinical Biochemistry & Immunology
- Clinical Pathology
- Cytology
- Hematology
- Histopathology & Frozen Section
- Serology

Empanelment at Healthcare Global Enterprise, Jaipur

Insurance/TPA (Third Party Administration)

- Aditya Birla Health Insurance
- Alankit Health Insurance TPA ltd
- Apollo Munich Health Insurance Company Limited
- Cholamandalam MS General Insurance Company Ltd
- Cigna TTK Health Insurance
- East West Assist TPA
- Ericson Insurance TPA
- Family Health Plan Ltd.
- Future Generali India Insurance
- HDFC ERGO General Insurance Co. Ltd
- Health India TPA of India
- Heritage Health TPA
- ICICI Lombard General Insurance Company Ltd
- Liberty General Insurance Limited
- MD India Health Insurance TPA Pvt Ltd
- Medi Assist TPA (Medibuddy)
- Medsave Health Insurance TPA Ltd
- National Insurance Company Ltd.
- Paramount Health Services TPA
- Park Mediclaim TPA Private Ltd
- Raksha Health Insurance TPA Pvt
- Reliance General Insurance co. ltd
- Star Health and Allied Insurance Co. Ltd.
- Tata AIG General Insurance Company Ltd
- The New India Assurance Company Ltd.
- The Oriental Insurance Company Ltd.
- United Healthcare TPA Pvt Ltd.
- United Insurance Company Ltd.
- UnitedHealth Care Parekh Insurance TPA
- Universal Sompo General Insurance Co. Ltd.
- Vidal Health Insurance TPA Pvt Ltd.
- Vidal Healthcare Services Pvt Ltd.

- Vipul Medcrop Insurance Pvt. Ltd

PSU & Govt Schemes

- Ayushman Bharat Mahatma Gandhi Swasthya Bima Yojna
- Rajasthan State Mines & Minerals Limited
- AMUL Diary
- Rajasthan University
- North Western Railways
- Reserve Bank of India
- Nuclear Power Corporation Limited

Corporate & Associations

- ICAI of CIRC, Jaipur
- IIFL
- MIND IT
- Shree Cement
- Uber System India Pvt Limited
- Hero Moto Crop Ltd.
- Sudrania Fund Services
- Varun Beverages Limited
- ITC Limited (Agri Business)

OBSERVATIONAL LEARNING

About IPD Billing :

For tracking all records and information relating to the costs and resource utilization during the patient's stay and take care of discharge, charges and the transfer process of a patient hospital has introduced IPD billing. It has three section, Cash, Credit, and Corporate. In HCG for credit, it has two section TPA & Bhamasha Yojna.

Before Admission-

- First, patient require registration.
- Secondly, they require admission advisory from their respective physician for admission.
- Thirdly, that patient need all the relevant documents for admission (Doctor's prescription, test reports, etc).
- If all the above documents are available with the patient, then he/she need to sing on general consent form and admission form.

General Consent Form- This form is basically a confidential from patient. That they are giving permission to treat them with further medication & surgical procedure. During this procedure they are also giving permission to medical trainee to treat themselves. During this hospitalization all his/her document, treatment, photo will be kept as confidential.

If anytime hospital authority wants to publish his/her treatment success, then also they will be taking permission on a consent to publish it.

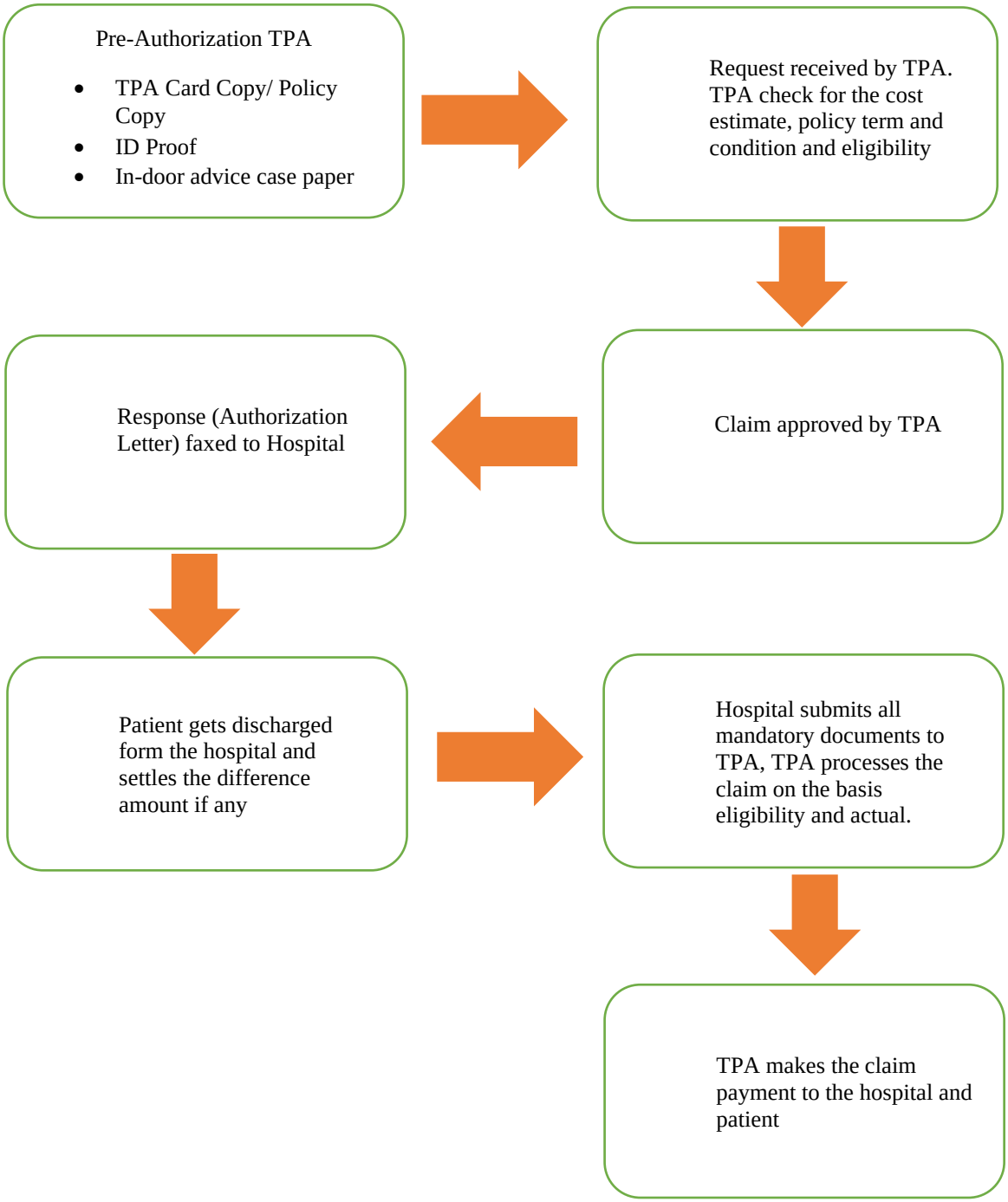
1) **Cash Patients-** For cash patients along with all the mentioned documents they should deposit some advance as per hospital norms.
    - If any treatment cost starting with Rs.15000 they need to deposit Rs.10000 for admission.
    - For above Rs.100000 they need to pay 80% amount in advance.
    - For cash patient before admission, they need to pay full surgical procedure amount.
2) **TPA Patients-** For TPA patients they need all the mentioned documents along with insurance id card.

    If they need to admit through TPA they should need preapproval from their respective TPA.

    If there is any emergency for admission and the patient do not have ant preapproval, then they should deposit Rs.5000 as advance for admission. Which is refundable at the time of discharge.

Bhamasha Patients- Bhamasha card along with medical documents with Rs.5000 advance.

Process Flow for TPA Patients



Figure

Gap Analysis :

- In HCG majority discharge are given while the consulting team is on round.
- Lack of manpower at the billing department.
- Delayed in settling of bills.

Recommendations :

- IPD bills should be updated on a daily basis.
- Patient should be guided and informed better for bill settlement process.

About Daycare Chemotherapy :

Chemotherapy comes under a type of cancer treatment which is used for or more anti-cancer drugs as part of a regimented regimen. Chemotherapy may be given with a curative intent, or it may aim to prolong life or to ease symptoms.

Process flow of Chemotherapy Department

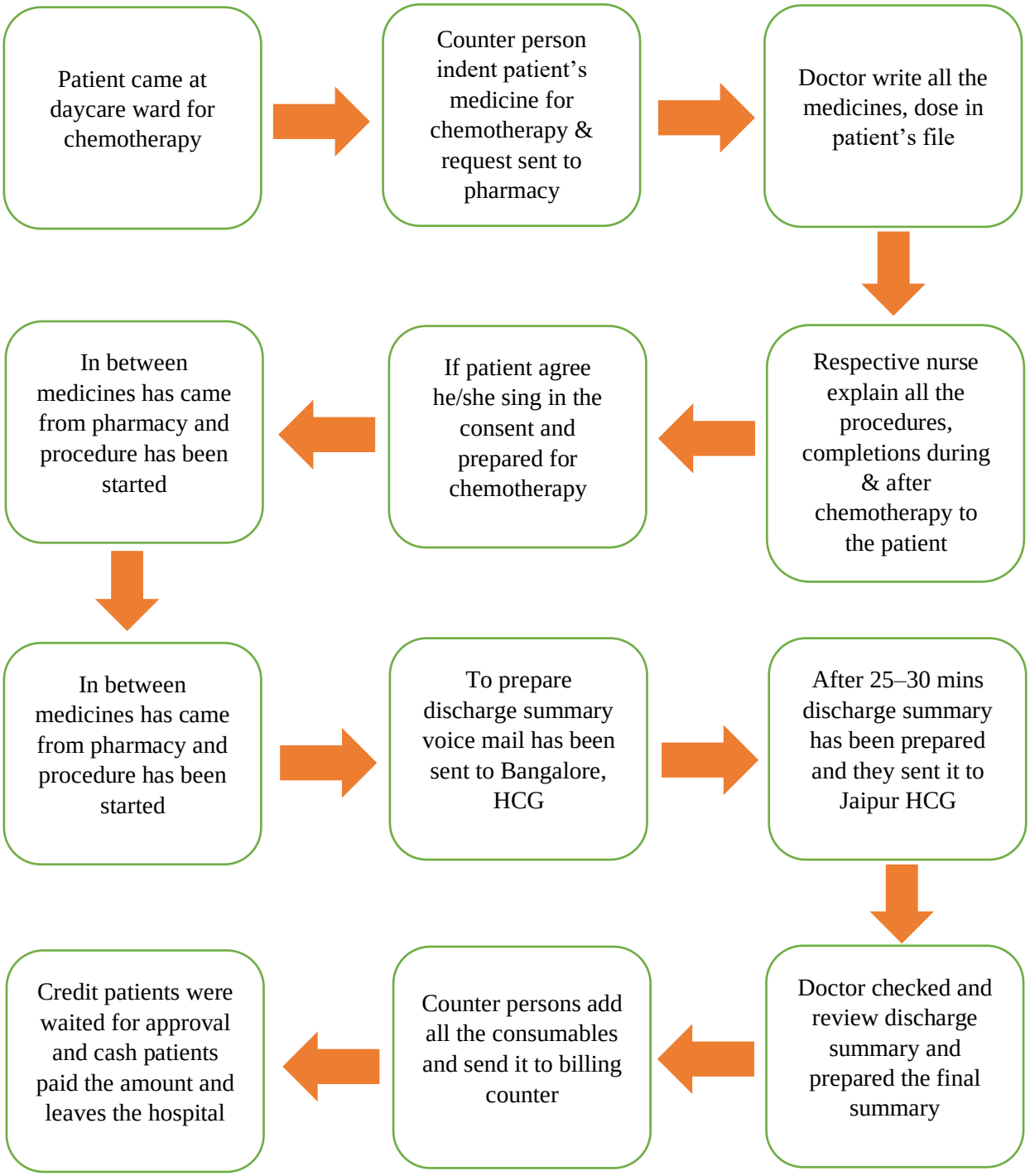


Figure 2

Recommendations :

- Supply chain gap needs to fulfil with pharmacy. Because of those medicine patients waited for the long time for their procedure, which leads to patient dissatisfaction and may hamper image of the hospital.

About Quality:

Since inception Healthcare Global Enterprise, Jaipur has been committed to providing the top-notch quality healthcare in a wholesome and compassionate atmosphere. HCG view quality as an essential part of their service delivery which aim to server their patients in a prime way.

Quality consists of the following element:

Compliance with

- Healthcare Global Enterprise Policies and Procedures
- Statutory Requirements
- National Accreditation Board for Hospital and Healthcare Providers (NABH)

Hospital inspection done by using

- Quality Indicators
- Patient Recommendation
- Clinical & non-clinical audits
- Incident Reporting
- Boards to run essentials functions of the hospital
- Training and Mock Drills to react to any emergency circumstances.

Constant Upgradation by

- Upgrading infrastructure of the hospital as well as infrastructure of patient care
- Human Resources through weekly/monthly teaching in fundamental technical areas, latest improvements in patient care.

Safety Program

- Patient and staff welfare
- Infection control
- Radiation protection
- Incident reporting
- Laboratory safety
- Emergency Responses Codes
- Safety Audits
- Supervision of Hazardous Materials

PROJECT REPORT : 1

A study on average waiting time in OPD (patient satisfaction)

INTRODUCTION

OPD is the part of a hospital intended for the treatment of outpatients, people with physical condition challenges who visit the hospital for diagnosis or treatment , but don't require any bed and not stayed overnight. Also OPD is the area which receives patients to provide them with health care facility for diagnosis, treatment and planning. It is the first point of contact between patients, their relatives and hospital and its staff.

The OPDs were as follows :

- Surgical Oncology
- Radiation Oncology
- Medical Oncology

PROCESS FLOW

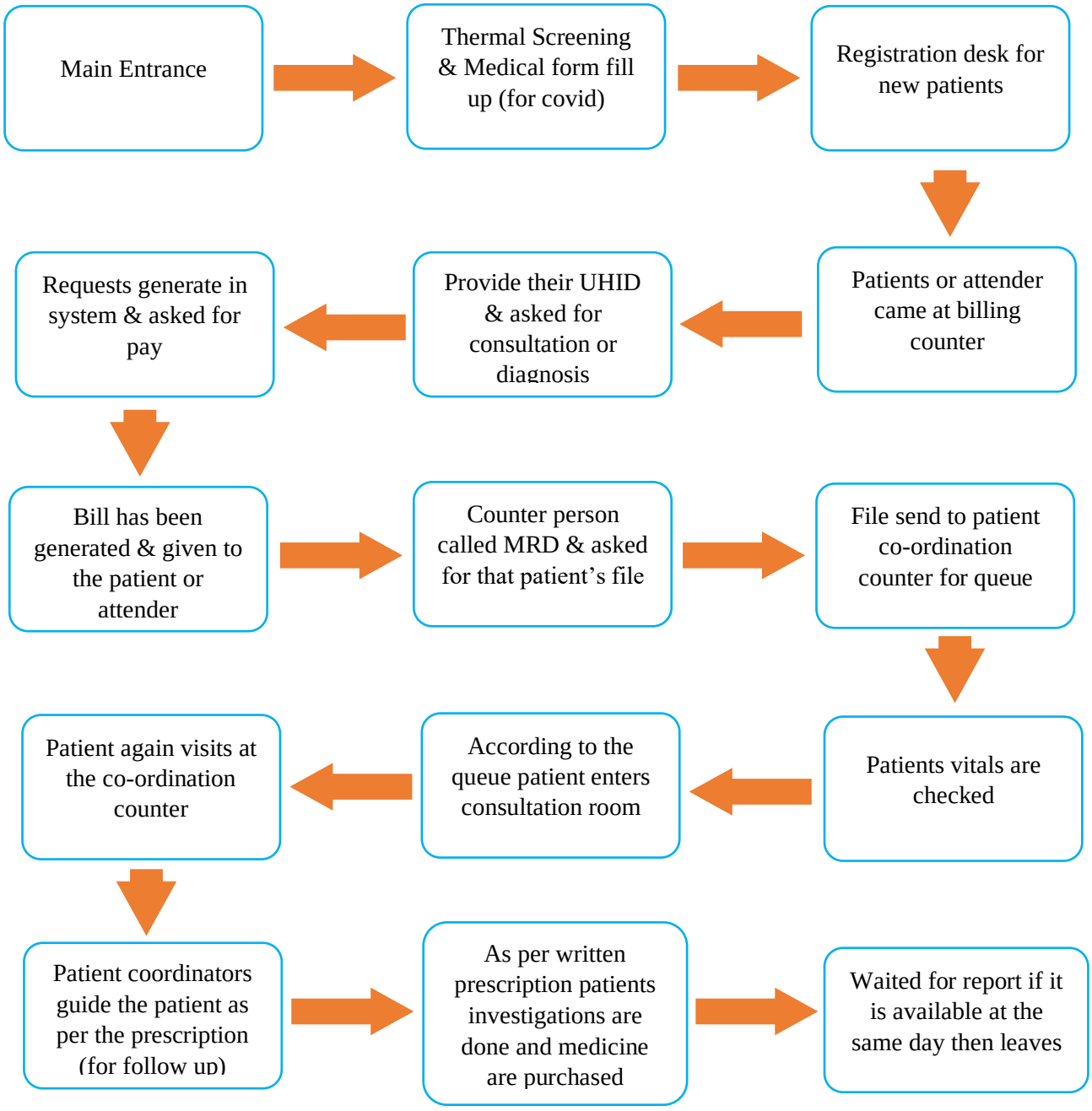


Figure 3

LITERATURE REVIEW

OPDs are described as the face of any hospital, as it is often one of the first points of between patients and the hospital. The impression about a hospital's OPD frequently affects patient's sensitivity towards the hospital. Therefore, it is crucial to ensure that OPD patients an exceptional experience to the customer. With the increase in the outpatient patient flow, there may be an increase in the blockages, which in turn, increases the waiting time which can be barrier on actual obtaining services.

RATIONALE

A long waiting time in OPD my leads to increased dissatisfaction among patients. It can hamper the hospital's image and sometimes it may lead to violence against the hospital staff and doctor. Hospital can loss their patient as well as revenue for this prolong waiting time.

RESEARCH QUESTION

What is the average waiting time in OPD in Healthcare Global Enterprise, Jaipur ?

SPECIFIC OBJECTIVES

- To study the process flow of OPD
- What are the different factors which may lead for high OPD timing

METHODOLOGY

Study Design

It was descriptive observational type of study in Outpatient Department of Healthcare Global Enterprise, Jaipur.

Type of Research

Primary Research

Data Type

Primary Data

Data Collection Tools

- Primary research on average OPD timing (arrival time, registration & billing time, waiting time, consultation time, time spent in pharmacy, diagnosis time)
- Used control charts, pie charts for identifying the problem.

Data Analysis Tool

- MS Excel

Sampling Plan

- **Sampling unit :** Patients of OPD
- **Sample size :** Patients were observed on day-to-day basis in the month of May 2021. Out of 91 patients, 83sample size was taken rest were removed in data cleaning and validation.
- **Sample collection technique :** Random sampling
- **Sample collection area :** Healthcare Global Enterprise, Jaipur

Sample Size : 83 patients

Duration : 7 days

Inclusion Criteria

- Those patients who were coming for OPD treatment

Exclusion Criteria

- Patients who were coming for IPD or Emergency services & OPD patients who also doing their diagnosis.

ANALYSIS

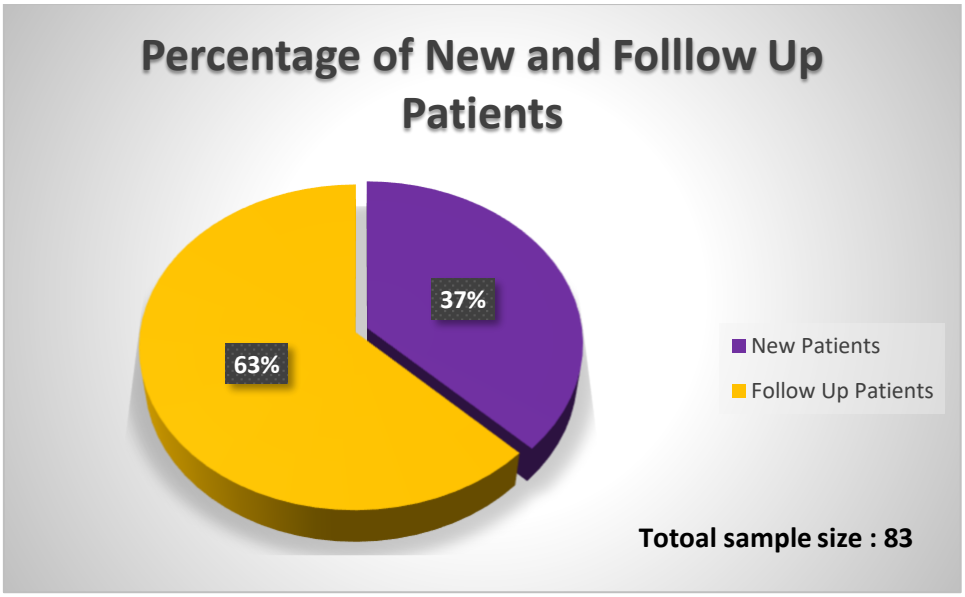


Figure 4

- The above chart is showing the percentage of new a patient and follow up patients who were follow up according to their pervious appointments.

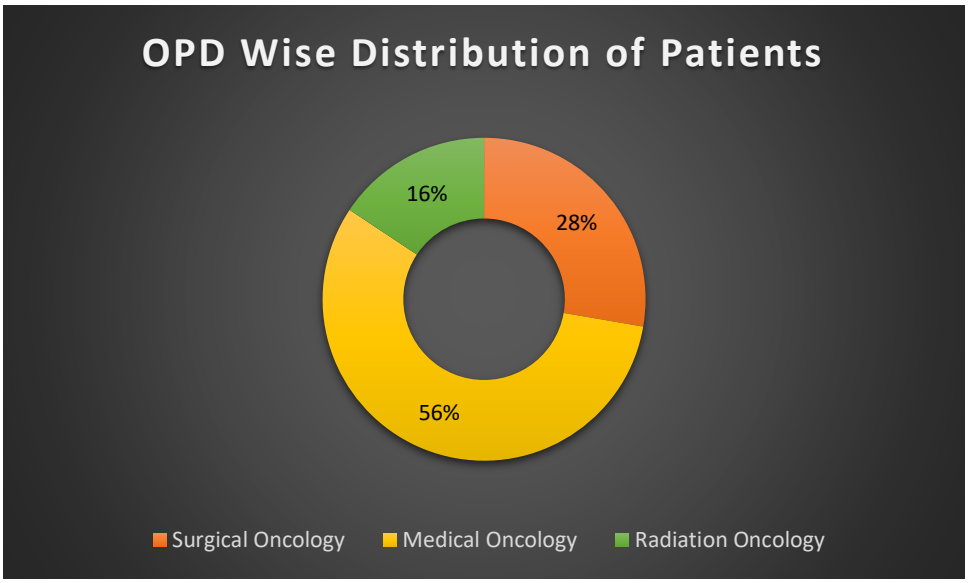


Figure 5

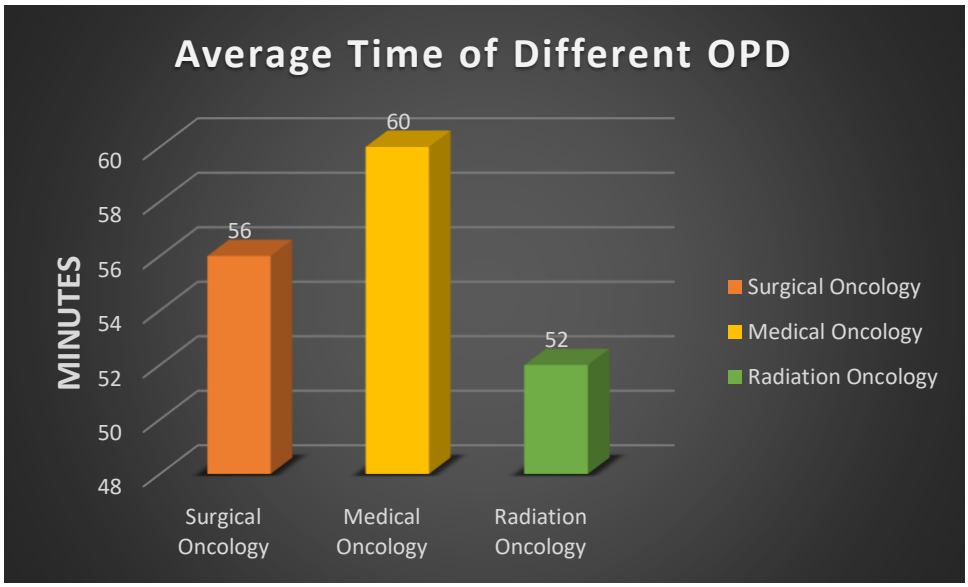


Figure 6

- According to the above chart's patients are more prefer medical oncology rather than surgical and radiation oncology. Which is clearly showing that patients are coming at the premature stage of their cancerous disease. It is maybe because of peoples are now more aware against cancerous disease and also because of Bhamasha Yojna scheme by Government of Rajasthan, under which they also covered severe disease like; cancer.

Control Chart

Control chart is basically a graph which were used for recognizing the number of shortcomings which leads to increased time in procedure.

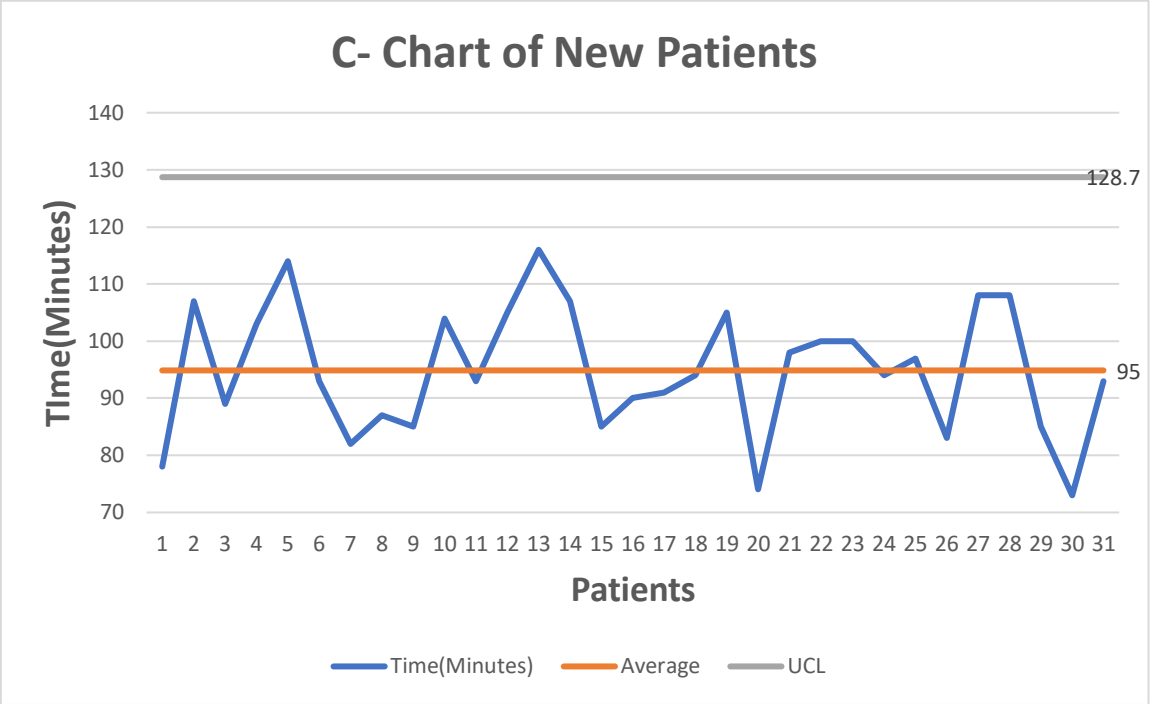


Figure 7

During the study , processes are in control for all the new patients who were came for consultancy. All the procedure has been done within the time. 95 min was the standard time, and 128.7 min was the upper control limit and no patient exceed more than 128.7 mins.

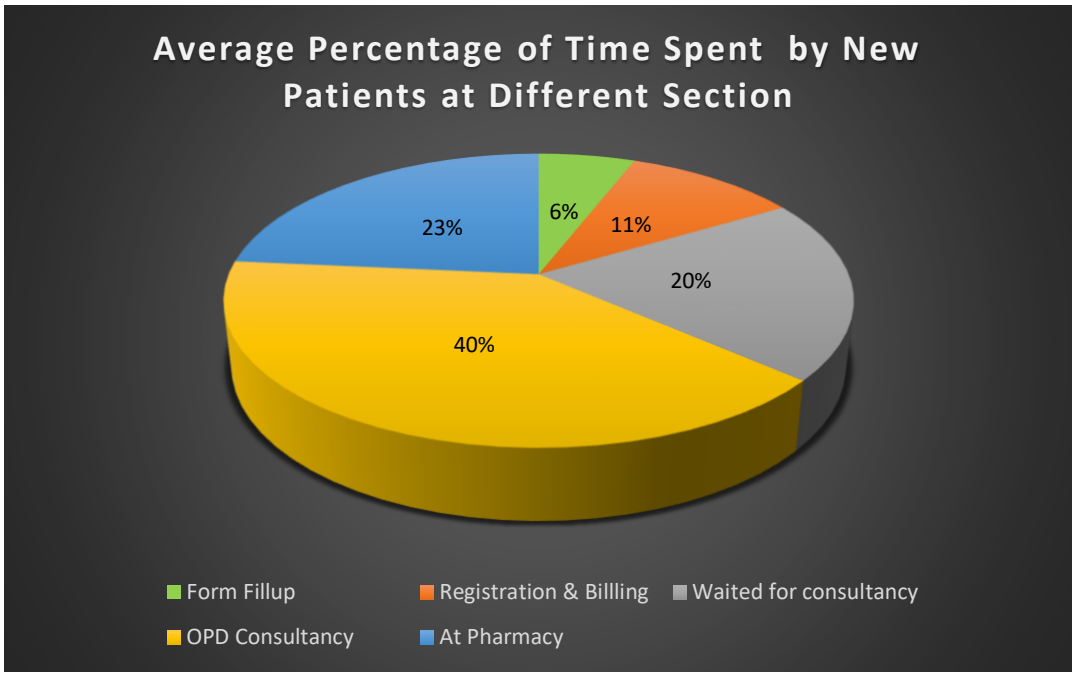


Figure 8

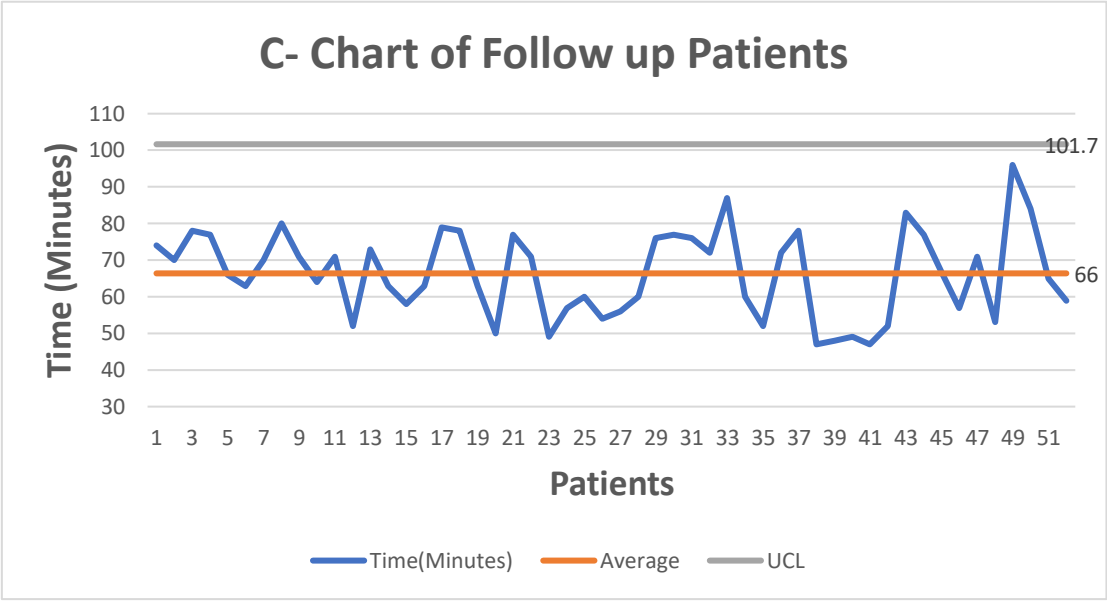


Figure 9

During the study, processes are in control for all the follow up patients who were came for their consultancy. All the procedure has been done within the time. 66 min was the average time and 101.7 min was the upper control limit & no patients were exceeded it.

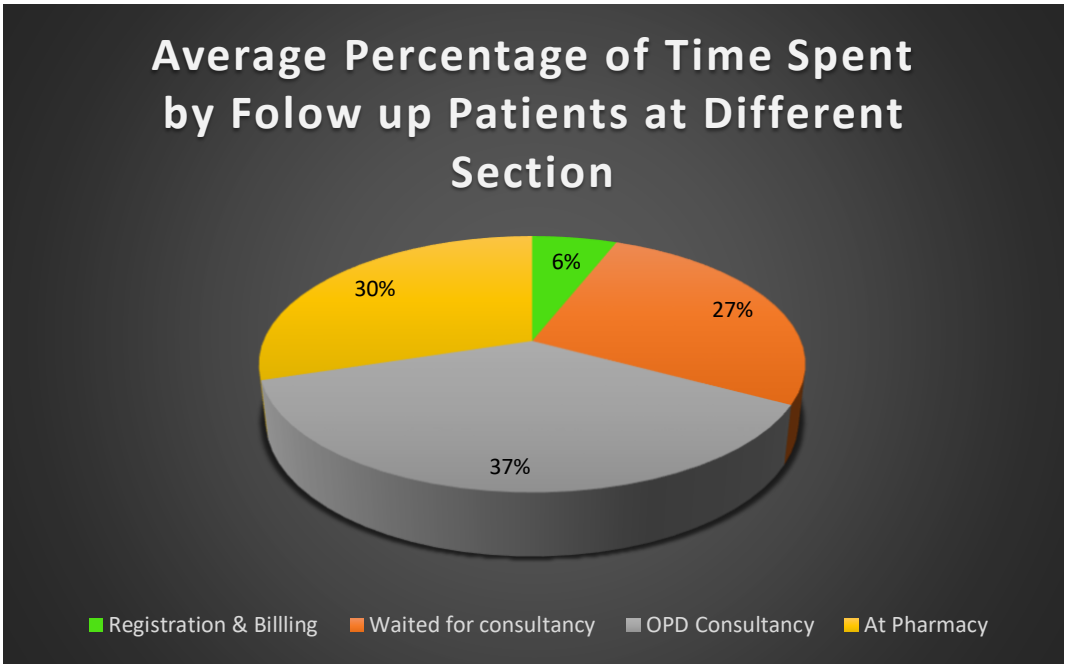


Figure 10

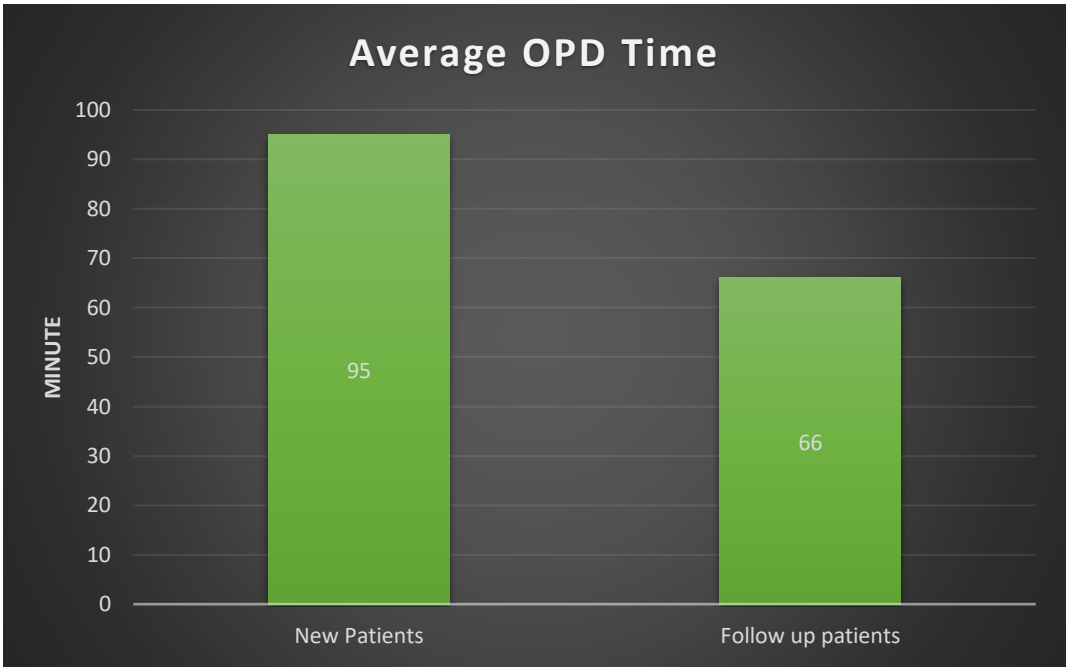


Figure 11

Root Cause Analysis (ISHIKAWA):

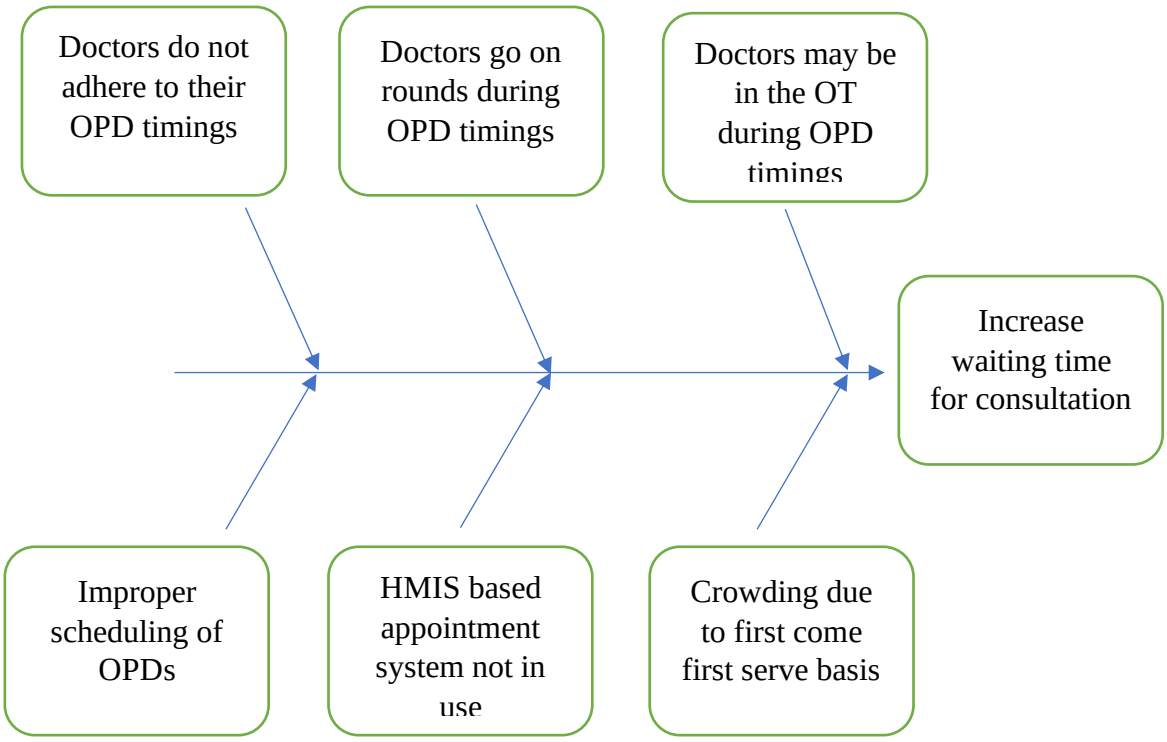


Figure 12: Cause and Effect Illustration of bottleneck (increased waiting time for consultation)

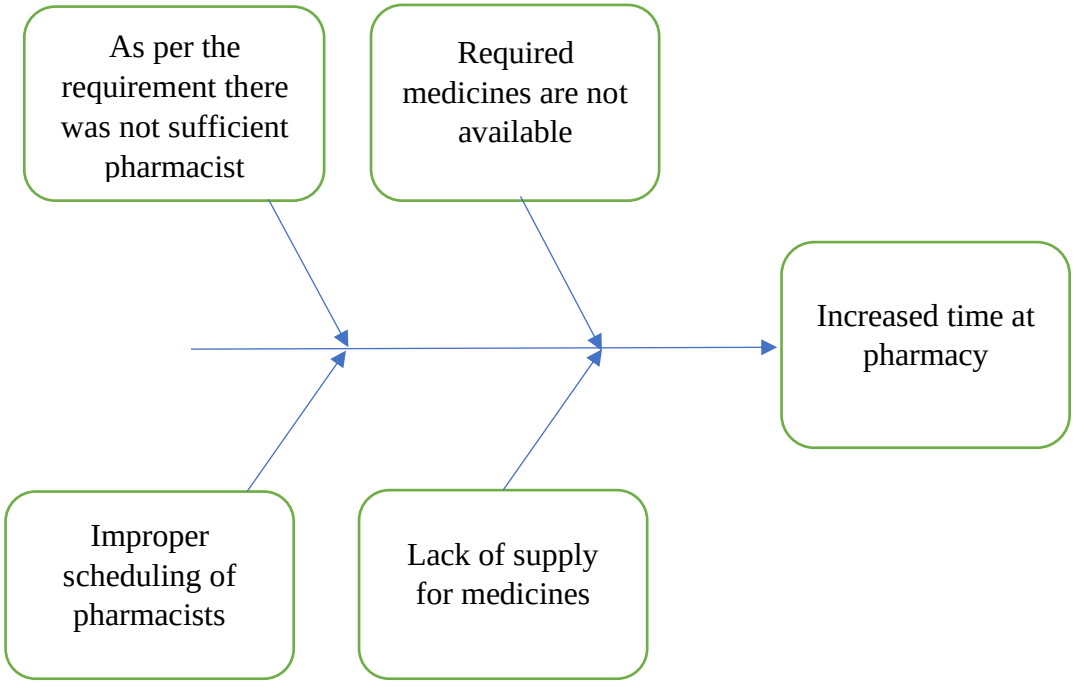


Figure 13: Cause and Effect Illustration of bottleneck (Increased time at pharmacy)

Findings :

- According to the collected data it is showing that new patients average OPD time is more than follow up patients. It is because of their registration process and more importantly for their consultancy duration.
- In both the cases waiting period before consultancy & spent time at pharmacy to high that lead high average time.
- Billing and registration time is also bit high due to heavy crowd and shortage of manpower.
- During observations, some patients and attender found in cafeteria and outside of the hospital in between their processes. Which is also lead to high OPD timing.

Recommendations :

Patient's perspective of the hospital is highly depending on waiting time in OPD. A high duration can affect patient's psychology about the services of that particular hospital. I made an honest effort to inducing it.

- A prior making appointment system can reduce patient's waiting time at OPD.
- Billing and registration time can be reduced by employing more staff.
- Patient Centric OPD scheduling, thus increasing utilization.
- Doctors should be advised to adhere to their allotted slots.
- Round should be taken prior to or after the OPD hours.
- In between OPD hours and OT timing there should be a proper coordination.
- Prior appointment can be done through HMIS based appointment system.
- Fixed Consultant timings.
- Pharmacy time can be reduced the assigning more pharmacist.
- Hospital should change medicine supplier to avoid essential drug shortage.
- Those patients who are travelling from far away they should get first chance to consult with the doctors through prior appointment and over telephone.
- By installing television and making magazines and newspaper available for the patients, waiting area might look friendlier.

CONCLUSION

The purpose was to determine the various causes of increased waiting time in the OPD and do a root cause analysis of the same, thus reducing the bottleneck in the entire process. The only one bottleneck were found to be waiting time for consultation.

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PROJECT REPORT : 2

A study on Turn Around Time in Diagnostic Radiology

INTRODUCTION

Radiology could be a medical science that uses imagining diagnosis and treat diseases seen at intervals the body. Radiologists use a range of imagining techniques reminiscent of X-Ray, MRI,CT,USG to diagnose diseases.

X-Ray

An X-ray machine delivers a controlled light emission, which is utilized to make an image of within our body. This beam is directed at the zone which is being analyzed.

CT

It represents the workhorse of radiology. It permits high paced bulk scans that can generate 2-D slices in various orientations, as well as sophisticated 3-D reconstructions.

USG

It is one of the cheapest and most harmless technologies in radiology. Ultrasound utilizes energy above the audible frequency of humans and generates images. Since there is no ionizing radiation, it is useful in imaging of children and pregnant women.

MRI

MRI uses the energy of the hydrogen atoms in the body. These atoms are exposed to strong magnetic fields and radio frequencies to produce an adequate amount of localizing and tissue-specific energy that will be studied by a computer program in order to generate 2-D and 3-D images.

Mammography

It is a specific type of breast imaging which uses low-dose x-rays that can detect cancer early; even before the patient experiences any specific symptoms.

Equipment's

- X-Ray machine.
- Computed Tomography
- Magnetic Reasoning Imaging
- Ultrasound

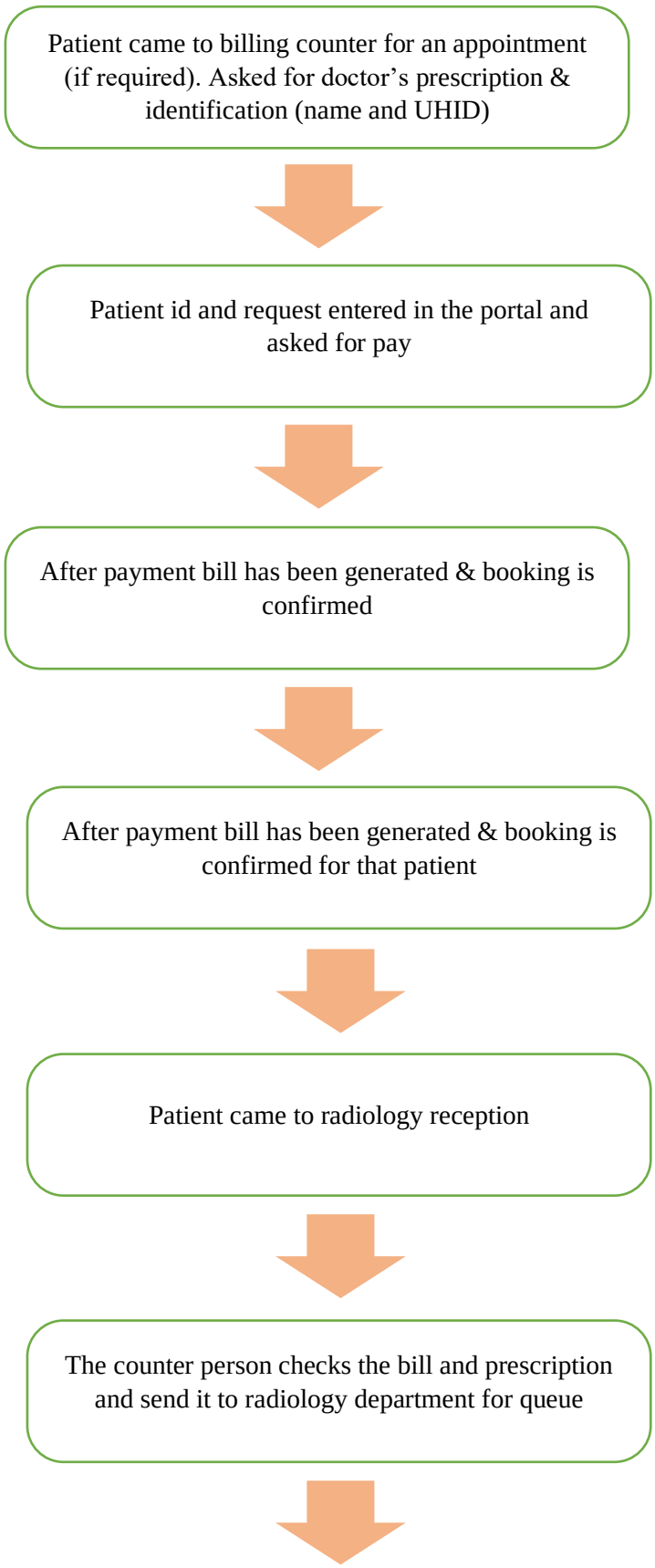
Staffing

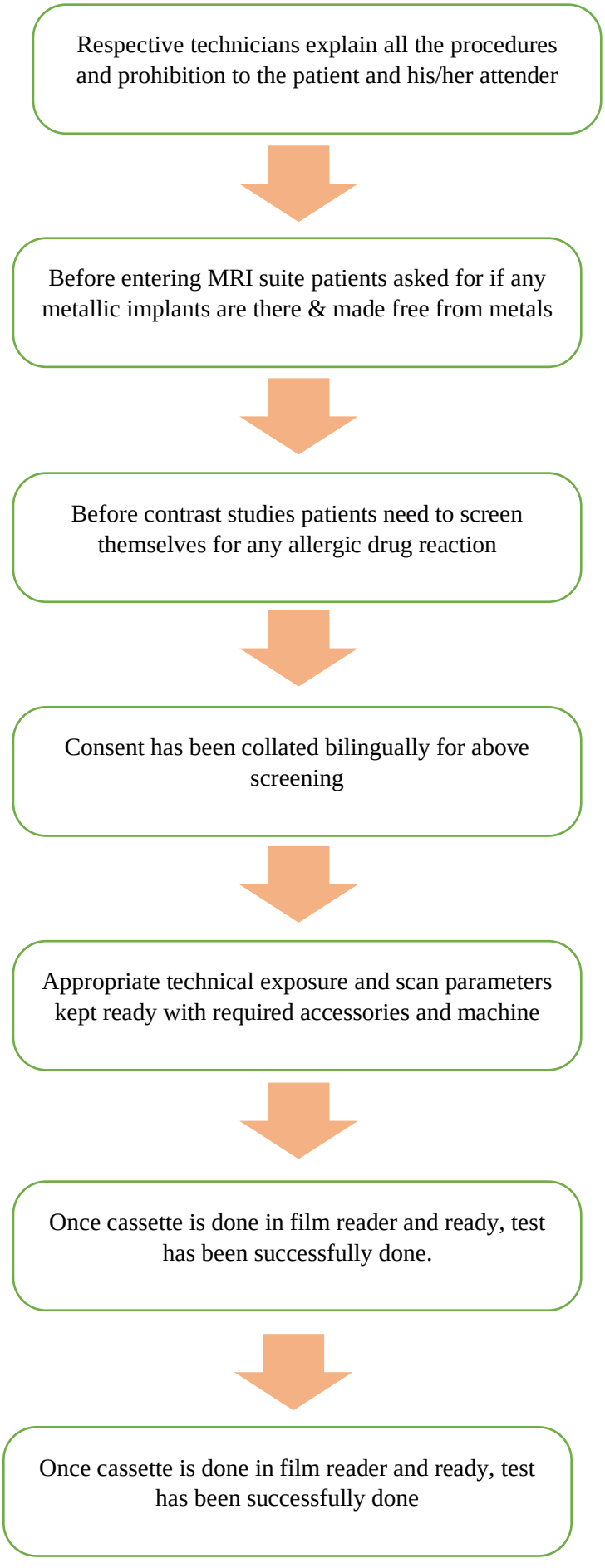
- Radiologist-1
- Radiographers
    - Senior Radiographer-1
    - Junior Radiographer-4

Radiation Safety Committee

- RSO

PROCESS FLOW




Respective technicians explain all the procedures and prohibition to the patient and his/her attender
Before entering MRI suite patients asked for if any metallic implants are there & made free from metals
Before contrast studies patients need to screen themselves for any allergic drug reaction
Consent has been collated bilingually for above screening
Appropriate technical exposure and scan parameters kept ready with required accessories and machine
Once cassette is done in film reader and ready, test has been successfully done.
Once cassette is done in film reader and ready, test has been successfully done

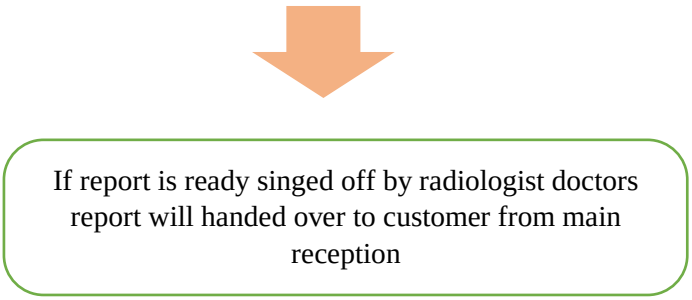


Figure 14

LITERATUE REVIEW

• The study was conducted on Bharti Hospital, Pune, to grasp TAT in Radiology department for patients who are suggested X-Ray in an exceedingly multi-specialty teaching hospital.
• The info assortment period was for twenty seventh Gregorian calendar month to sixteenth March 2017 (18 days).
• Use empirical listing within the study tool to seek out the time taken for every patient.
• Patients are determined from one method to another, from the time of recommendation until the relinquishment of report, mapping each and minute of gap between 'time of advice to receipt time' followed by 'receipt time to in time' then 'in time to the time of X-ray is performed' followed next by 'the final X-ray done to report generation time' and also the time gap between 'report generation to report relinquishment time'.
• Timeliness that is expressed because the turnaround (TAT) is commonly utilized by the clinicians as the benchmark for radiology performance.
• Clinicians depends on quick turnaround time to attain early identification and treatment of their patients and to achieve early patient discharge from emergency departments or hospital in-patient's services.
• Out of 108 patients , eighteen were IPD patients and ninety were OPD patients.
• it absolutely was determined that the overall median time for completion of all the steps was 112.5 min. most median time taken was forty minutes for initial interval.

RATIONALE

Radiology department is one of the most patient's inflow department where patients come for scans. For long waiting time hospital might loss patient as well as revenue.

RESEARCH QUESTION

What are factors that may lead to increase Turn Around Time of Diagnostic Radiology at Healthcare Global Enterprise, Jaipur ? What is the average waiting time of different type of scans in Radiology ?

SPECIFC OBJECTIVES

- To study the process flow and TAT of Diagnostic Radiology
- To find out different factors that determine turnaround time for complete process

METHODOLOGY

Study Design

It was descriptive observational type of study in diagnosis radiology department of Healthcare Global Enterprise, Jaipur.

Type of Research

Primary Research

Data Type

Primary Data

Data Collection Tools

- Primary research on diagnosis radiology department (billing time, arrival time, waiting time, in time, out time)
- Used control charts & bar diagrams for identifying the problem

Data Analysis Tool

- MS Excel

Sampling Plan

- **Sampling unit :** Patients of Radiology department
- **Sample size :** Patients were observed on day-to-day basis in the month of June 2021. Out of 171 patients, 149 sample size was taken rest were removed in data cleaning and validation.
- **Sample collection technique :** Random sampling

- **Sample collection area :** HCG Healthcare Global Enterprise, Jaipur

Inclusion Criteria

- Patients covered under Diagnostic Radiology

Exclusion Criteria

- CT patients (location was different)
- IPD Patients

ANALYSIS

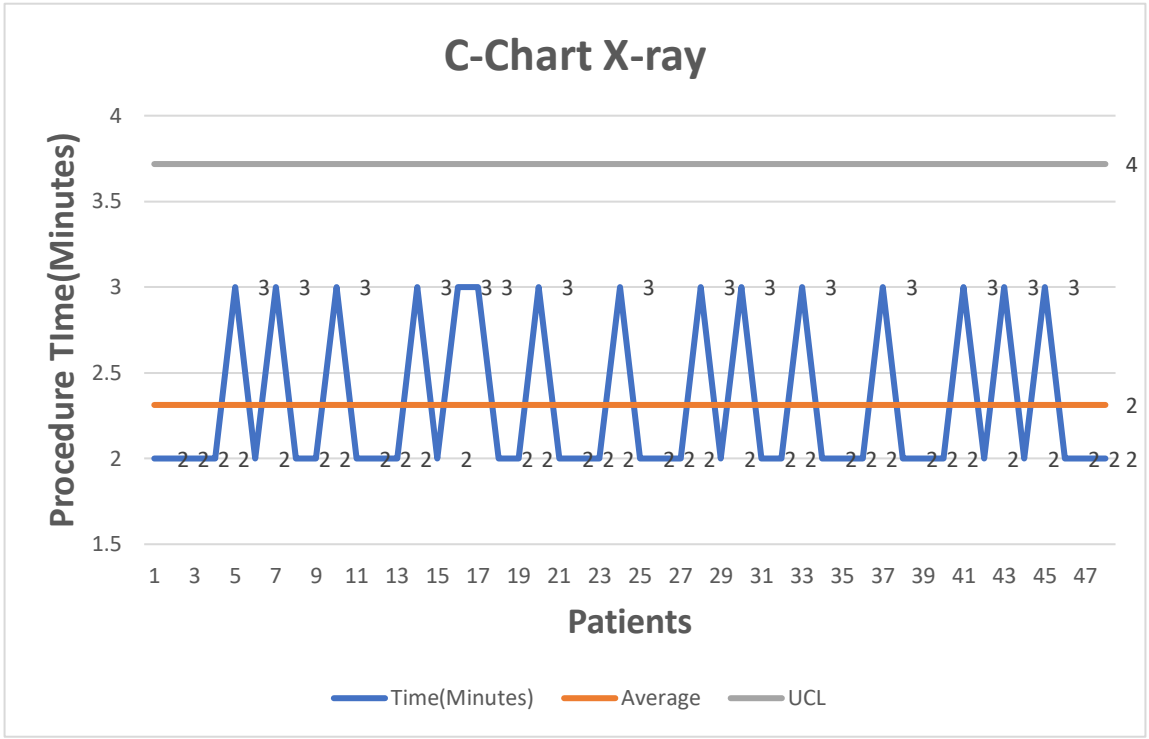


Figure 15

The C-Chart portrays the subsequent discoveries :

- The Chart is showing UCL(Upper Control limit) & control limit that is average.
- This C-Chart has been used for detects if there is any defect in sample.
- As shown in portrays all the procedure has been done within the time. 2 min was the standard time, and 4 min was the upper control limit and no patient exceed more than 4 mins.

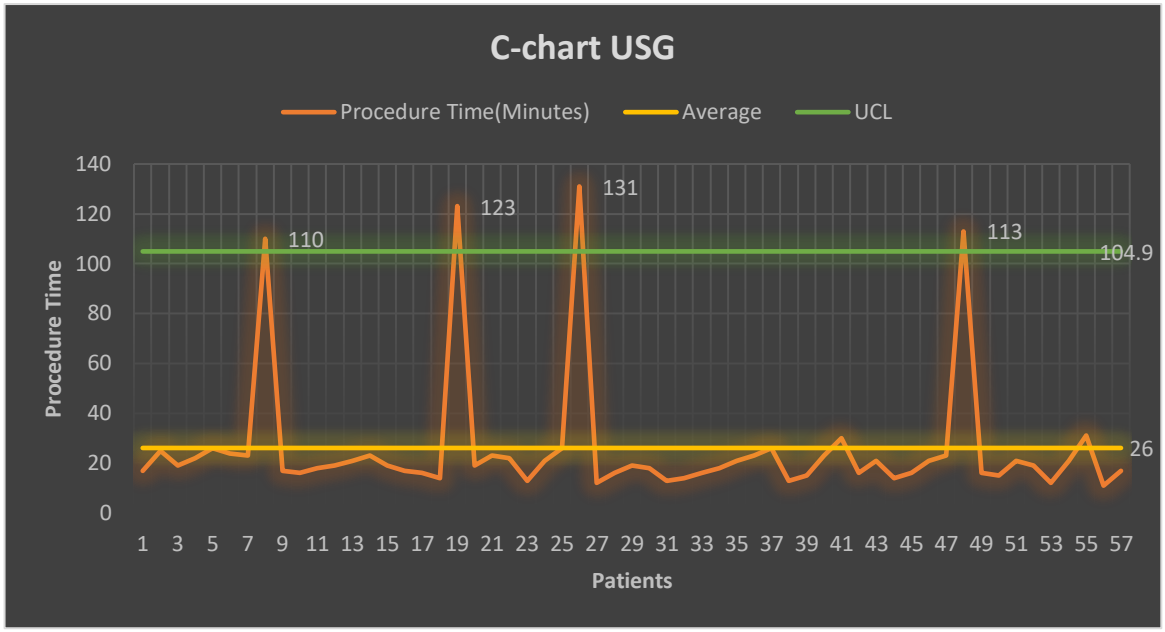


Figure 16

As shown in portrays , there are 4 outliers which are above the UCL (Upper Control Limit) which exceed 105 mins, rest are within the control border.

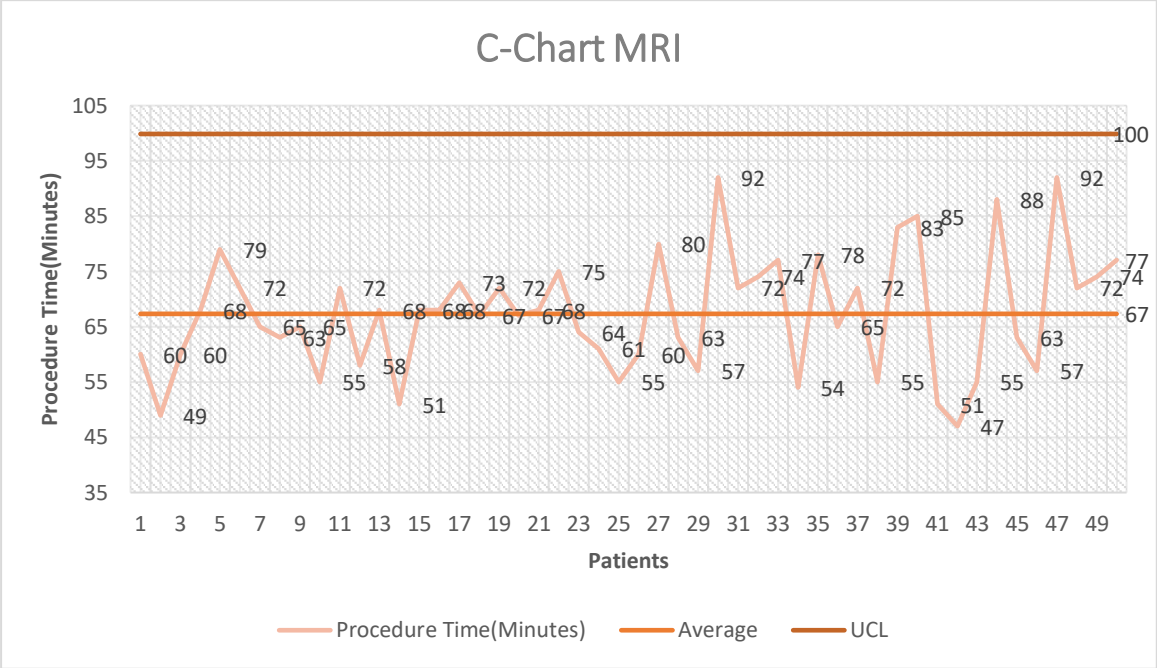


Figure 17

For MRI procedure all the patients are in control limit who were traced during the study. The mean time is 67 mins & UCL is 100 mins & all procedures were done within the time frame and not exceed more than 100 mins.

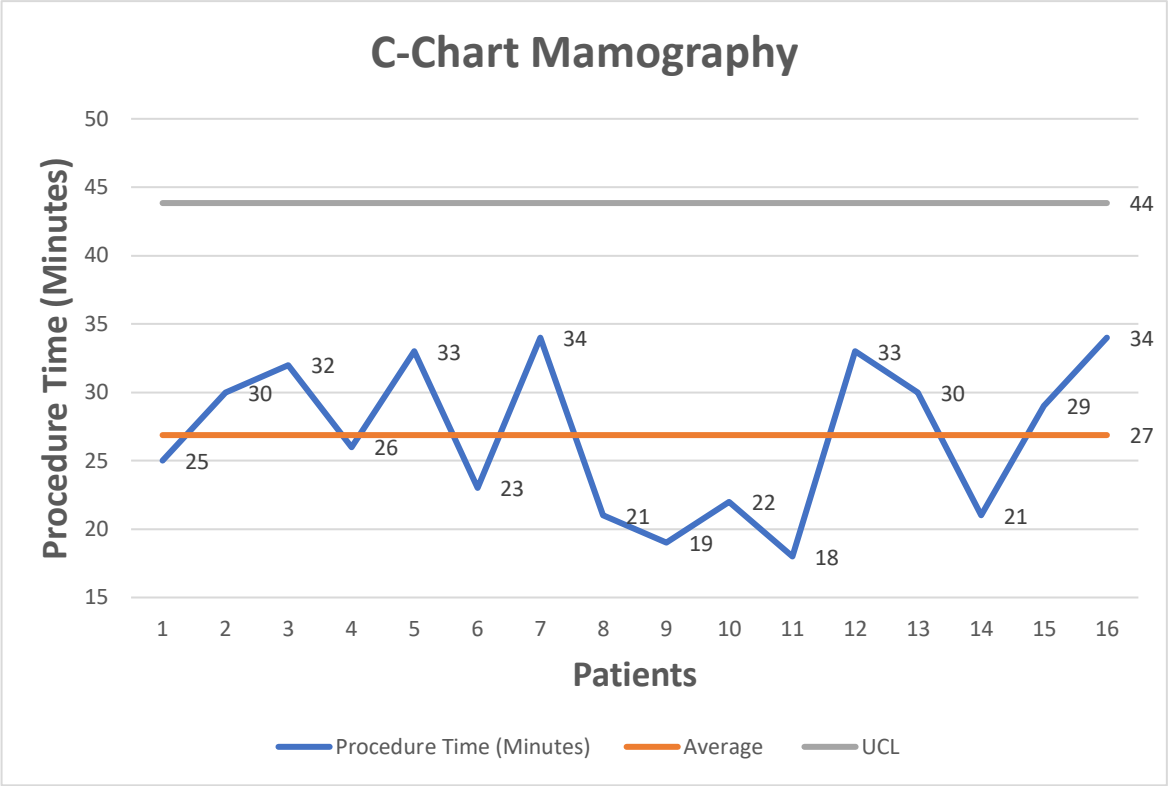


Figure 18

For Mammography procedure all the patients are in control limit who were traced during the study. The mean time is 27 mins & UCL is 44 mins & all procedures were done within the time frame and not exceed more than 44 mins.

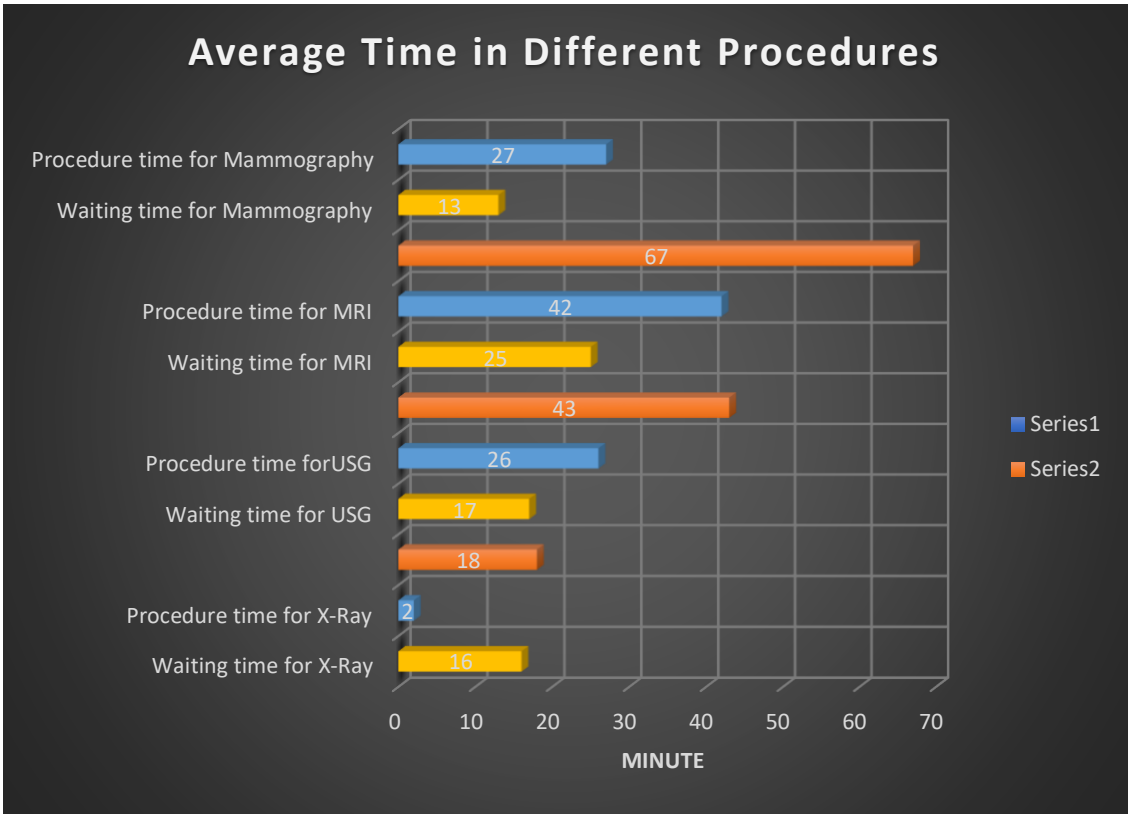


Figure 19

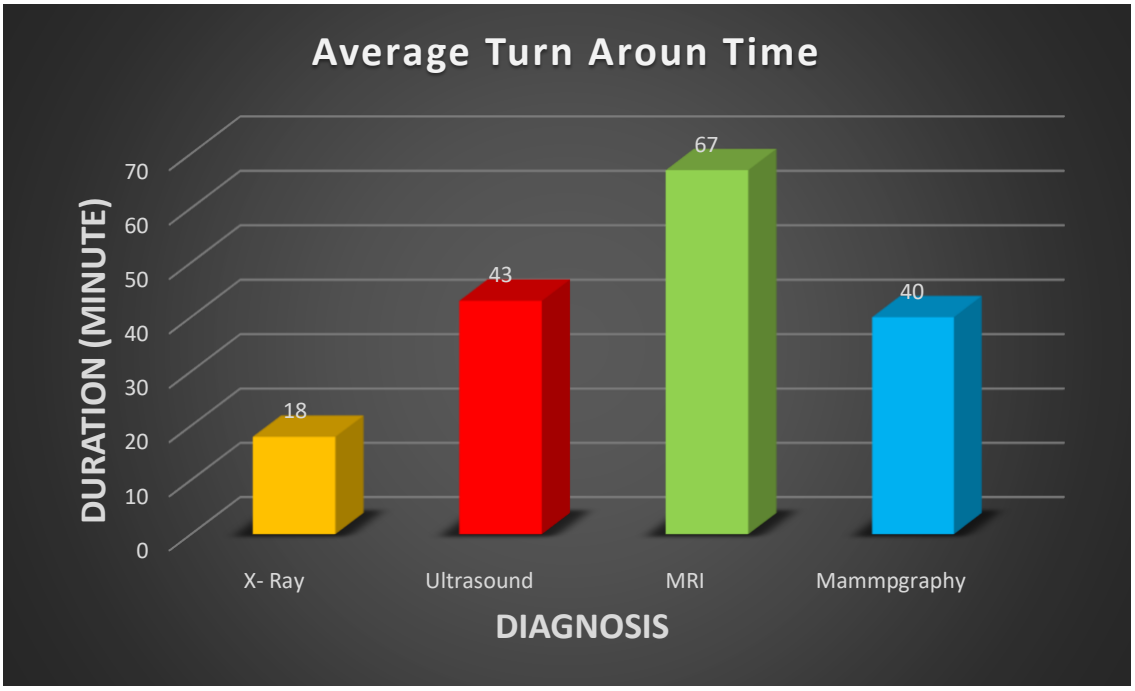


Figure20

ISHIKAWA Model

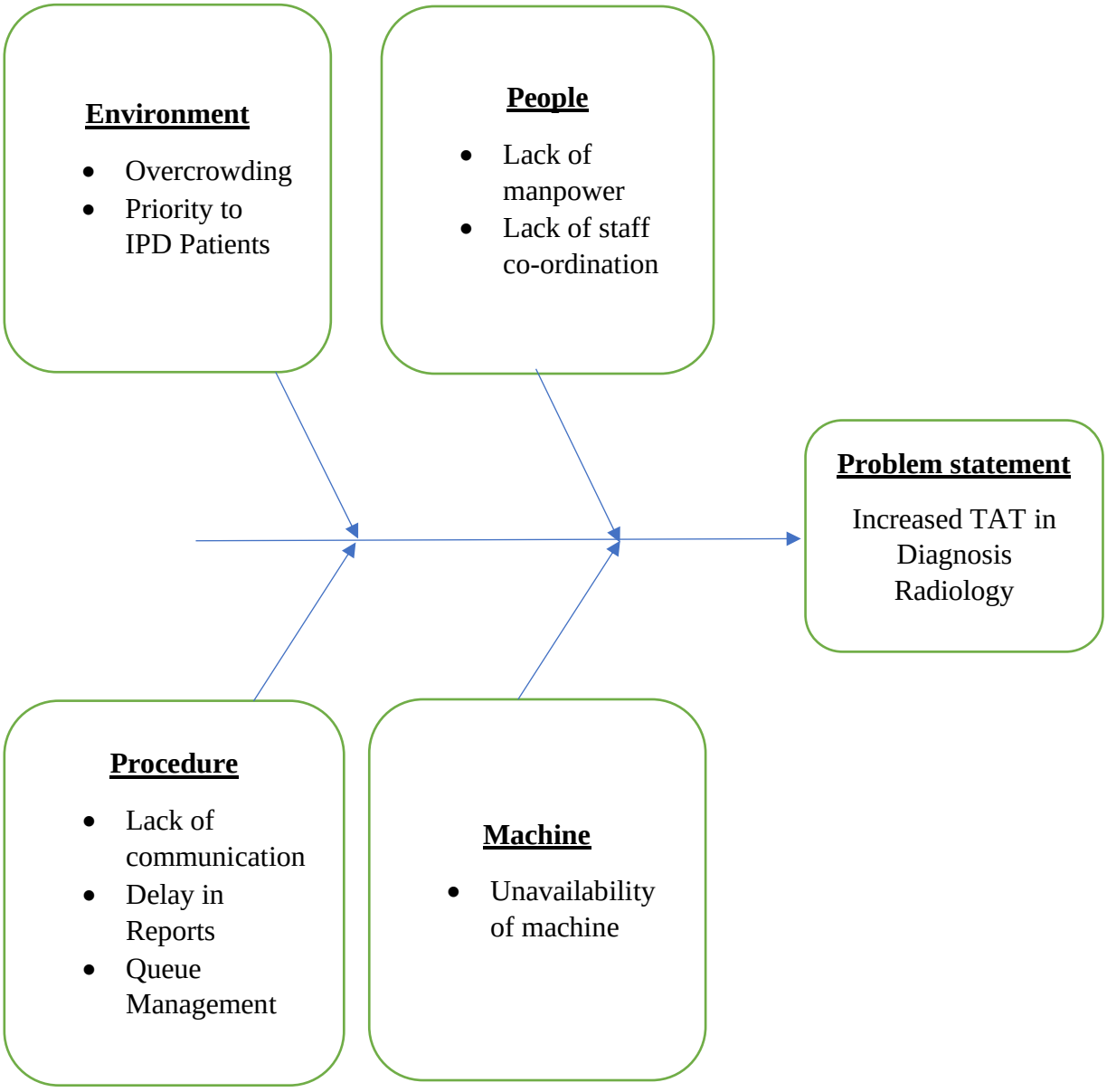


Figure 21: Cause and Effect Illustration of bottleneck (Increased TAT in Diagnosis Radiology)

Findings :

Factors which are affecting to high turnaround time-

- Unavailability of equipment's
- Due to improper queue management turnaround time is increasing

- Shortage of manpower
- Lack of co-ordination among staffs
- IPD patients procedures in OPD hours

Recommendations :

- Unavailability of equipment's is one of the major reasons behind high TAT, hospital should deploy more equipment's.
- Assigning more radiographer to avoid high turnaround time
- Staffs timing will be more prominent to avoid shortage of staff
- Co-ordination among staffs should be increased
- To improve queue management their should have token system
- Displaying patients queue on screen should be there to avoid asymmetrical queue system

CONCLUSION

Turn Around Time of any process indicates the quality of the procedure that is delivered by the organization to the customer. There may be several factors due which there may be increase in the turnaround time is stated. These fac tors needs to control by the organization, so that the quality of the procedure is ensured. Staff unavailability, failure in queue management, and movement of patients is going cut of the department. Turn Around Time was calculated by observational study and the recommendation was made accordingly to reduce Turn Around Time.

REFERENCES

- *"A_STUDY_ON_TURNAROUND_TIME_IN_RADIOLOGY_DEPARTMENT_FOR_PATIENTS_ADVISED_X-RAY_IN_A_TEACHING_HOSPITAL_*. (2019)." https://www.academia.edu/32316522/

ANNEXURE

Sr. No	Name of the Department	Date(s) of visit	% of time Spent	Interacted with (Name and Designation)
1	OPD	11/05/2021 to 18/05/2021	15%	Ms. Sonam Chandak (HOD) Ms. Priti (Senior Exe) Mr. Babulal (Junior Exe) Ms. Rajni (Junior Exe)
2	IPD Billing	19/05/2021 to 26/05/2021	15%	Ms. Sonam Chandak (HOD) Ms. Ritu (Senior Exe) Mr. Kuldeepak (Senior Exe) Mr. Vijay (Junior Exe)
3	Ward	27/05/2021 to 29/05/2021	6%	Ms. Nitu (Senior Nurse) Ms. Ishita (Junior Nurse) Mr. Pramodh (Junior Nurse) Ms. Premlata (Junior Nurse)
4	Radiology	31/05/2021 to 30/06/2021	58%	Dr. Ghanshyam (Radiologist) Mr. Deepak (Senior Radiographer) Mr. Sachin (Junior Radiographer) Mr. Rajesh (Junior Radiographer) Ms. Rita (Junior Radiographer)
5	Daycare Chemotherapy	01/07/2021 to 03/07/2021	6%	Mr. Alex T Joseph (Pharmasist) Dr. Ishita (Chemotherapist) Mr. Ratan (Senior Nurse) Mr. Pritam (Junior Nurse) Mr. Lokesh (Junior Nurse)