

Quality Assurance and Quality Monitoring in PET - CT Department in a Tertiary Care Corporate Hospital, Pune

Dr. Ambika Swami¹, Dr. Neha Ahire²

¹Student, MBA (Hospital & Healthcare Management), Symbiosis Institute of Health Sciences, Pune, Symbiosis International (Deemed University) Maharashtra, India

Corresponding Author Email: [ambikaswami.mba2123\[at\]sihspune.org](mailto:ambikaswami.mba2123[at]sihspune.org)

Contact No.: 7023323499

²Assistant Professor, MBA (Hospital & Healthcare Management), Symbiosis Institute of Health Sciences, Pune, Symbiosis International (Deemed University) Maharashtra, India

Abstract: Introduction: Quality assurance and Quality monitoring is much needed in hospitals because it helps in rapid advancement in healthcare sector. In order to provide patient - oriented services, health systems have changed how treatment is delivered in recent years. Patients are now the primary emphasis, and new organisational models have been implemented. It is challenging for a healthcare professional to change a patient's perception of the quality of care because a healthcare institution is very tough to quantify. Understanding and defining patient satisfaction will make it easier to create an evaluation process and helps organisation to take useful measurements of the factors that affect patient satisfaction. "The degree to which a patient's expectations for their medical experience and their appraisal of the quantity of care they actually receive line up, according to the definition of patient satisfaction". Another good experience of patient there should be minimum waiting time. Long wait times for patients to be seen area significant issue hospitals may have. This can lead to patient dissatisfaction and affect a hospital attempts to uphold its excellent reputation in the community. Aims and Objectives: This study aims at evaluating quality assurance and quality monitoring in the PET - CT by Analysing Waiting Time, Investigating the nature and potential value of praises, suggestions, and complaints made to analyse patient satisfaction index. Methodology: It is a quantitative retro prospective study Retrospective data collected from January 2022 to June 2022, Prospective data collected for the month of July 2022, which aims at quality assurance and Quality monitoring in PET - CT department by analysing - Patient Waiting Time - Collection of data started with visiting respective department and observing the Patient's Arrival time, patient procedure start time and procedure out time. Patient satisfaction index - For calculating Patient satisfaction Index, Collection of feedback forms January to July which is filled by patients. Results: From above, outcomes results Recommendations and preventive measures has been plotted and Root cause analysis tool is also applied and plotted fishbone diagrammed for the respective department to increase patient satisfaction, enhance patient safety and to decrease the waiting time. By Fishbone Diagrams and value stream mapping shows factors like Environment, Equipments, Patients of the departments affects in increasing and decreasing waiting time. RCA done on patient satisfaction index which shows some criteria there should be training of staff on educating patient correctly. Conclusion: Factors that are obtained from Fishbone Analysis and value stream mapping are needed to be worked upon so that Patient satisfaction can be enhanced. Staff should have communication with patients and their relatives about rescheduling cancellation appointment. Also, it tells whether staff passed every information about procedure to patient correctly. There should be proper hand hygiene training for staff of respective department. Listening to the patient observing the patient behaviour, communication skills of the staff etc all are an important for maintaining long term relationship with the patient.

Keywords: Patient safety, waiting time, IPSG, Feedback, Patient satisfaction index

1. Introduction

In order to provide patient - oriented services, health systems have changed how treatment is delivered in recent years. Patients are now the primary emphasis, and new organisational models have been implemented.

Quality assurance and Quality monitoring is much needed in hospitals because it helps in rapid advancement in healthcare sector. In order to provide patient - oriented services, health systems have changed how treatment is delivered in recent years. Patients are now the primary emphasis, and new organisational models have been implemented. It is challenging for a healthcare professional to change a patient's perception of the quality of care because a healthcare institution is very tough to quantify.

A healthcare institution is extremely difficult to Quantify, making it difficult for a healthcare worker to alter a patient's opinion on the quality of service.

Understanding and defining patient satisfaction will make it easier to create an evaluation process and helps organisation to take useful measurements of the factors that affect patient satisfaction. Patient experience can be measured in various ways likely monitoring quality assurance and in a respective department or by taking feedbacks from the patients also by observing the total time patient visiting the department.

Why patient satisfaction evaluation is important for an organisation?

Because improving the quality of care to patients is most important in hospitals. Be attention to the what patient is saying, observing the patient behaviour, communication skills of the staff etc all are an important for maintaining

Volume 13 Issue 9, September 2024

Fully Refereed | Open Access | Double Blind Peer Reviewed Journal

www.ijsr.net

long term relationship with the patient. Patient satisfaction surveys are crucial because they help in seeing potential issues and fix them before they become serious ones. Most significantly, they may create more patient loyalty by displaying respect for their opinions and a desire to identify methods that will improve the experience.

Long wait times for patients to be seen are a significant issue hospitals may have. This can lead to patient dissatisfaction and affect a hospital's attempts to uphold its excellent reputation in the community.

“Patient wait times have been cited by the World Health Organization (WHO) as one of the most crucial signs of a responsive healthcare system”.

A number of patient outcomes, such as patient satisfaction, access to care, health outcomes, trust, and willingness to return, are impacted by waiting times in hospital outpatient clinics. Only a small number of studies have examined the length and variability of patient waiting times. The goal of this study is to understand the factors that affect how long patients must wait in outpatient clinics.

Hospital Portfolio

"Jupiter Hospital is a multi - specialty, tertiary care hospital with a 'Patient first' ethos at its core. " This Hospital offers services in all areas of medicine, including cancer treatment and multiple organ transplants in addition to childbirth and newborn care". It is the first hospital in the area to get NABH accreditation, is a 400, 000 square foot hospital spread across three acres. It can compete with any top - tier hospital in the globe. The hospital supports its state - of - the - art laboratories, which provide universal diagnostic and screening capabilities, together with its accommodation of 350+ beds that are distributed across 7 levels.

2. Research Methodology

Research Design

Type of Research

Quantitative and retrospective and prospective longitudinal study – It involves process of gathering data in real time and also collecting data from past and interpreting and analyse it numerically. It can be used to identify trends and averages to a larger group.

Population - Patients visiting departments.

Period - Data Collected from patients who visited the PET - CT department and left written Feedbacks from January 2022 to July 2022 were analysed.

- Retrospective data collected from January 2022 to June 2022,
- Prospective data collected for the month of July 2022.

Sample - Patients Visiting PET - CT Department.

Sampling Method - Simple Random Sampling Method - In this type of sampling in which we randomly selects a subset of participants from a population.

Data Collection Tools -

- Patient in - out Register – (Evaluating Waiting time)- This includes the time patient arrival time, registration, Billing and time till the procedure starts. It depends on many factors like patient comes at the appointment time not too late or too early, and the facilities and discipline, sincerity in the staff of department.
- Feedback forms- Patient feedback is an important resource for understanding issues with patient care in healthcare organizations.

Data Collection

Past data is collected through data stored in hospital software and for real time data collection I have visited to Radiation oncology department for one month and observing the waiting time, Patient behaviour and also collected feedbacks from the patient after the procedure is completed.

- Firstly staff enters the in time for the patient on the time of patient arrival and record it into the software
- Then staff ask them to wait and when the procedure starts staff enters the procedure time into the record
- After completion of procedure staff enters out time of the patient
- After that staff asks for the patient to fill the feedback forms.

Methodology

This is a quantitative retro prospective study which aims at quality assurance and Quality monitoring in PET - CT department by analysing -

- Patient Waiting Time
- Patient satisfaction index.

For the data collection of Waiting Time, Collection of data started with visiting respective department and observing the Patient's Arrival time, patient procedure start time and procedure out time.

For calculating Waiting Time, Gathering of all the data from January to July and enter them into the excel. After that for calculating Formulae applied is -

Patient waiting time = Patient waiting time *1440

After that calculating the average of Patient Waiting Time minutes in each month then, with the help of this data, trend analysis of Patient Waiting Time is created in respective department from January to July.

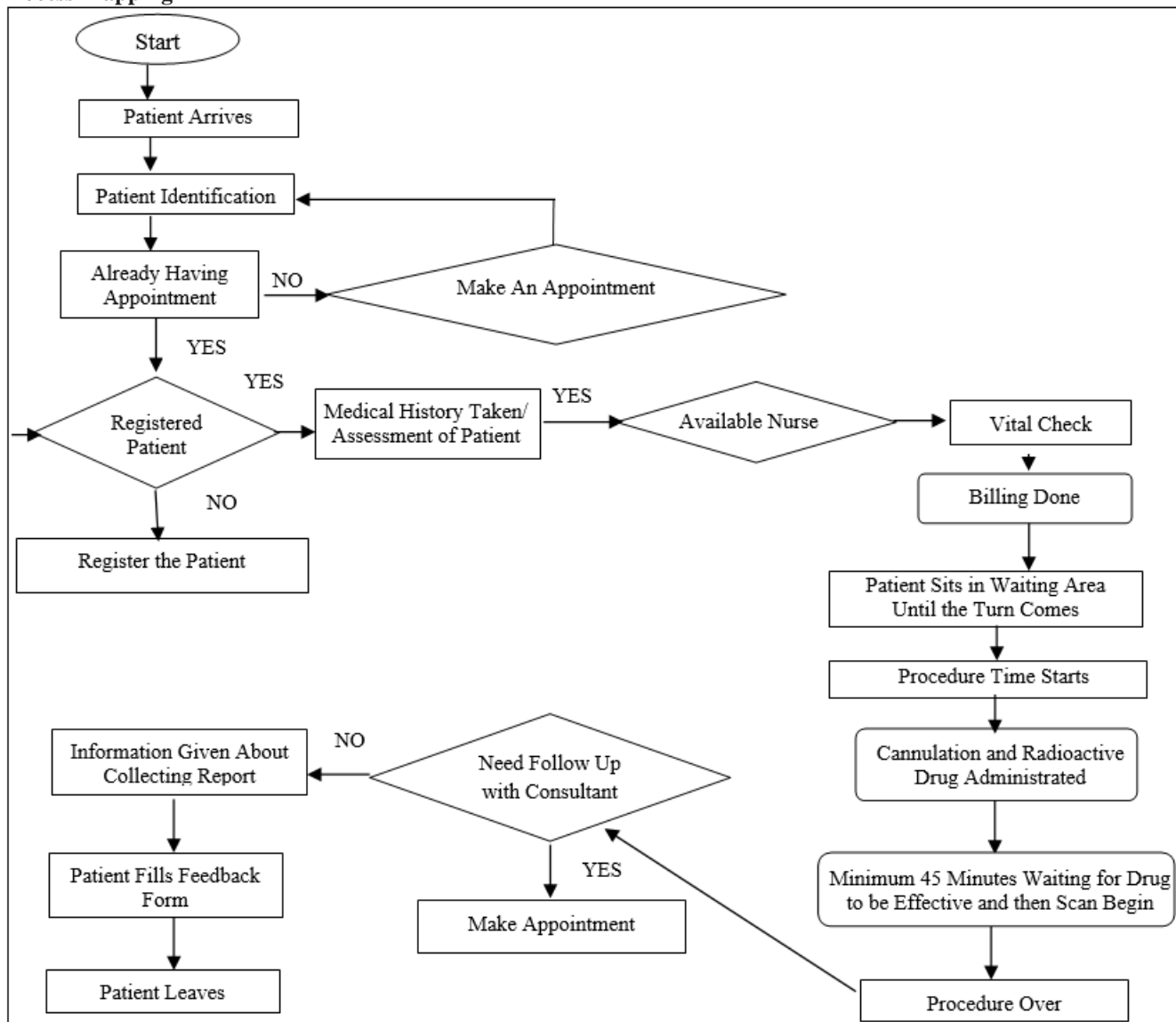
During data collection and observation time process analysis is also done in three parts i. e. process mapping, structure and process.

3. Structure

Table 1: Structure of Department

S. No	Structure	Description
1	Equipment	1. PETCT Machine - G discovery IQ.3 ring by GE healthcare
2	Department structure	Reception area - 1
		Waiting area - 2
		Console - 1
		Injection room - 1
		Changing room - 1
		Specially active toilet for injected patients - 1
		Doctor's Cabin - 1
3	Staffing	Consultant - 1
		Technicians - 2
		Nursing Staff - 2
		Receptionist – 2
		Medical Transcriptionist - 1
		Housekeeping Staff - 1
4	Average Flow Of patient	Average of 14 patients per day and 260 patients Per month.
5	Departmental working hours	Morning 7: 30 AM to Evening 6: 00 PM (Monday to Saturday).
6	Display of patient rights and patient education	It is displayed on main reception area in English, Hindi and Marathi language. There are different types of pamphlets present on the reception like - awareness about chemotherapy, 7 danger signs of cancer.
7	Signage's	Emergency & Exit Signs. Signages are displayed. Radiation hazards signs are displayed in every area of department like - For pregnant women For children's, For breastfeeding mothers.
8	Forms	1 consent form (Clinical Informed consent form for PET - CT), Registration form, Patient in out register, Patient report Dispatch register.
9	Cleaning Schedule	Every day in morning
10	Cleaning of Patient area in between	Cleaned by Instep Act after every patient
11	Environmental factor	Temperature - Max - 21 degree Celsius
		Min - 18 degree Celsius
		Humidity – 60
12	Medication trolley	Medicines are stored in the trolley with appropriate labelling & coloured labels. High Alert & Look Alike Sound Alike Medicines are stored separately as per policy, with appropriate colour label and are verified by qualified individual.
13	Crash Cart Available	1 and it is checked by Nursing team leader monthly
14	Crash cart Inventory Check	Crash Cart checklist is updated on daily basis In case emergency; items used from crash cart are refilled immediately. Upper trolley is checked in every 15 days. Audit is done twice a month.
15	High Alert medicine/LASA	List is displayed in the department
16	List of hazardous material	XEPI Rub CET Omnipaque R1 Taski Sodium Hypo chloride Hydrogen Peroxide List of Hazardous Material is updated. Storage of chemicals is done as per the norms. Flammable chemicals are stored separately with appropriate labelling. Safety Measures are updated in the Material Safety Data Sheet of the material with spill management and accidental measures.
17	No. of spillage kits available	1 spillage kit is present in the department which contains - Disposable bad, Goggles, Absorbent paper or Pad, Personal protective equipment (PPE), Waste collection bag, Packs of disinfectant surface wipes. Scoops and scrapers. Signage.
19	Fire Extinguisher	1 in the department which is ABC type
20	Fire monitoring Devices	Fire alarm, Smoke detectors and sprinklers are present in every area of department
21	Bio Medical Waste Segregation	Segregation of biomedical waste is done at the point of generation in the appropriate colour codes containers. Sharps & glass in separate container.
22	Radioactive waste	Radioactive waste is collected after minimum time of 48 hours when the reading comes to zero
23	Fire Exit Display route	Only one entrance and exit gate is there

Process Mapping



For the Patient Satisfaction - For calculating Patient satisfaction Index, Collection of feedback forms January to July which is filled by patients.

Following criteria is included in the Patient feedback forms

Table 3: Feedback Form Criteria

Section	Criteria
Appointments	Ease of booking
	Waiting time
Reception Staff	Courtesy & willingness to help
	Information on service
	Information on cost & billing
	Response to queries
Consultant Doctors	Counselling on treatment plan
	Follow up advice / instruction
Nurse / Technician	Guidance for tests / procedures
	Care & attention
Patient Education material	Explanation of follow up / investigations
	Quality of content

And then enter them into a tabulated form in an excel in a scoring format i. e.

- Excellent (n1) - 5
- Very good (n2) - 4
- Good (n3) - 3
- Average (n4) - 2
- Poor (n5) - 1

n= no. of score given by the patient according to their satisfaction.

After, segregated the all 5 4, 3, 2 1, respectively and then calculated maximum score, actual score, percentage

- Maximum score = Total of score in the respective criteria*5
- Actual Score= (n1*5) + (n2*4) + (n3*3) + (n4*2) + (n5*1)
- Percentage = Actual score / Maximum Score*100
- And then calculating the average of percentage for each month, and also the each criteria with the help of this data, trend analysis of patient satisfaction index is created from January to July. Also, Analysis of each criteria of feedback form of each month is also calculated.

4. Results and Discussion

By doing this Quantitative retrosprospective study and after collecting and analysing data outcomes are obtained and that are-

Table 4: Outcome

S. no	Outcome	Description
1	Waiting Time	It is calculated by subtraction of Patient Arrival Time by Procedure start time.
2	Patient Satisfaction Index	It is recorded by collecting feedback forms then scoring then according to their level.

Table 4: Waiting Time Calculation Month Wise

Month	Sum of Time Taken	No. of Observations	Waiting Time
January	2886	234	12
February	2247	274	8
March	3342	301	11
April	3112	265	12
May	3853	257	15
June	3026	254	12
July	5367	254	21

This table shows the average waiting time in All 6 months by calculating all the data from January to July. And from this table trend analysis is formed –

Discussion

For waiting time - By calculating waiting time from January to July, following data is obtained-

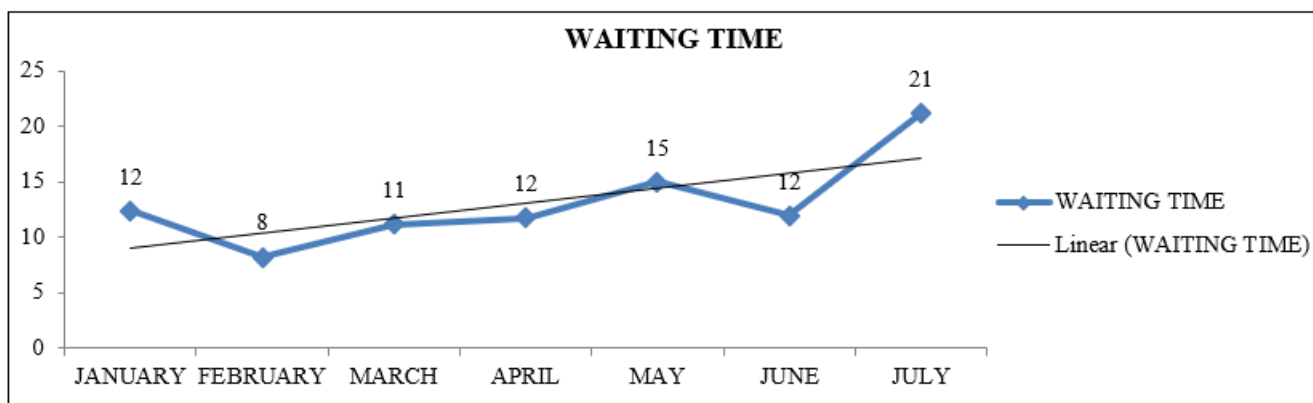


Figure 1: Trend Analysis Waiting Time (January to July)

Root Cause Analysis

Some cause is observed for increasing waiting time the department. They are mentioned below in the form of fishbone diagrammed -

- **Fish Bone Analysis** is a diagrammatic representation which reflects relationship between cause and effect in fish bone like appearance. This analysis helps in identifying a problem in a department and according to the cause or problem recommendations are made.

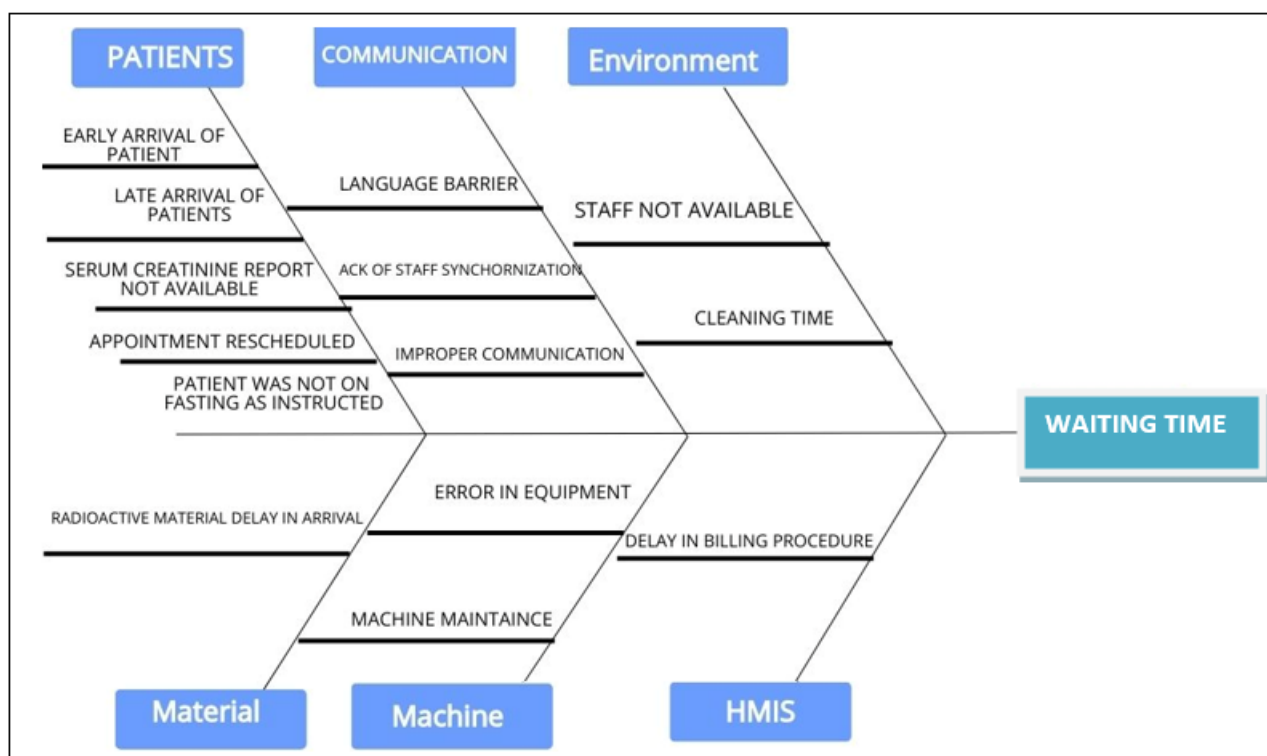


Figure 2: Fish Bone Diagram

According to the major issues department suffered are mentioned in diagram above which results increasing waiting time.

Discussion

Table 5: Fish Bone Diagram Discussion

S. no	Criteria	Causes	Discussion
1	Environment	Staff not available	There were two receptionists in the department but due to the absence of one receptionist there was delay in process of billing registration.
2	Environment	Cleaning time	Due to the spill of any hazardous material or blood there will be cleaning in between working hours of department.
3	Equipment	Error in equipment	Some time there will be fault in machines this can result in delay of procedure.
4	Equipment	Machine maintainance	Machine maintainance is not a major cause but it sometime it happens and it can result in cancellation of an appointment also.
5	Patients	Early arrival of patient	Due to early arrival of patient, waiting time automatically increase as their turn comes according to the appointment scheduled.
6	Patients	Appointment rescheduled	Due to some problems unexpected reasons appointments can be rescheduled.
7	Patients	Patient was not on fasting as instructed	In PET CT fasting is need before the scan at least of 6 hours but sometimes patient doesn't follow the protocol so there will be delay in procedure.
8	Patients	Serum creatinine report not available	Serum creatinine report is need before any PET scan begins sometimes patients come without serum creatinine report so they advised to get the test done.
9	Patients	Late arrival of patients	Late arrival of patients is also an amour cause for increasing waiting as their turn already gone so they had to wait for every patient to complete with the procedure.
10	Communication	Improper communication	Sometime improper communication causes miscommunication regarding appointment time.
11	Communication	Lack of staff synchornization	Due to lack of staff synchronization delay also happens
12	Communication	Language barrier	It is also the major cause some time patients not able to understand language they are speaking like during information about process of procedure or timings of appointment.
13	Hmis	Delay in billing procedure	Due to absence of one receptionist there will be delay in billing procedure. And also other reason was patient is referred from other hospital and this results in increase in billing process.
14	Material	Radioactive material	As radioactive element comes daily to hospitals, so sometimes there was delay in arrival of radioactive elements so it will automatically increase waiting time

Value Stream Mapping -

Another tool used in this study was Value stream mapping. - This shows us how various processes are currently flowing. It lists the actions in a healthcare service that offer value and those that don't. By lowering or removing non - value -

added service delivery operations, the future state Value - Stream Mapping may be ascertained.

The following discoveries are represented graphically in the current state Value - stream mapping as follows:

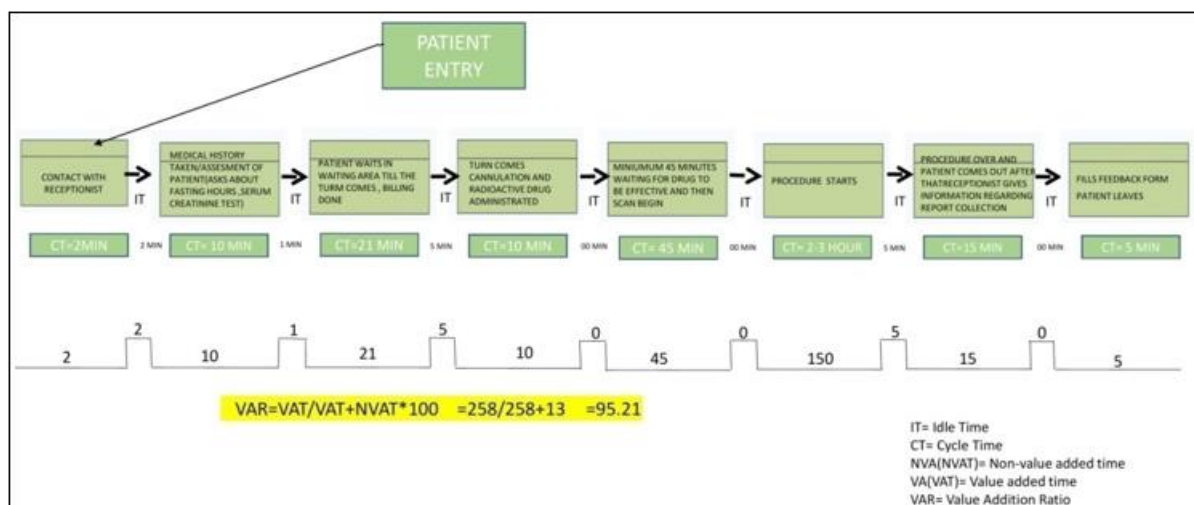


Figure 3: Value Stream Mapping Diagrammatic Presentation

1. Cause And Effect Matrix

Three levels of patient care—Pre - procedural Delay, Procedural Delay, and Post - procedural Delay—were taken into consideration while assigning a priority factor to each category and cause of delay. A scoring scale is used in the matrix, with 0 denoting no impact, 1 denoting a low impact,

3 denoting a medium impact, and 9 denoting a substantial impact on the delay in patient treatment. After assessing each source of delay, the rating was sorted to determine which factors contribute more to delays at different levels of patient care. The graphic in next page shows the Cause & Effect Matrix's findings.

Table 6: Cause and Effect Matrix

S. No	Category	Causes	10	10	10	Total
	Key Requirement	0 No Impact 1 Low Impact 3 - Med Impact 9 - High Impact	Delay in Patient Service During Pre Procedure	Delay in Patient Service During Procedure	Delay in Patient Service during Post Procedure	
1	Environment	Staff not available	3	1	3	70
2	Environment	Cleaning time	1	1	1	30
3	Equipment	Error in Equipment	9	3	3	150
4	Equipment	Machine maintenance	3	3	3	90
5	Patients	Early arrival of patient	9	9	9	270
6	Patients	Appointment rescheduled	9	1	1	110
7	Patients	Patient was not on fasting as instructed	9	9	9	270
8	Patients	Serum creatinine report not available	9	9	9	270
9	Patients	Late arrival of patients	9	9	9	270
10	Communication	Improper communication	3	3	3	90
11	Communication	Lack of staff synchronization	3	1	3	70
12	Communication	Language barrier	1	3	1	50
13	HMIS	Delay in billing procedure	3	1	3	70
14	Material	Delay in arrival of radioactive element	3	1	3	70

Patient Satisfaction Index –

By calculating feedbacks given by patient of the respective department and scoring them into the tabulated form following result is obtained -

Month wise Maximum score is calculated by adding all the maximum score of each month and in the same way total actual score is calculated.

Table 7: Patient Satisfaction Calculation

Month	Maximum Score	Actual Score	Patient Satisfaction Index
January	10975	10238	93%
February	10975	10238	93%
March	5720	5440	95%
April	4605	4400	96%
May	11020	10264	93%
June	10775	10123	94%
July	2505	2371	95%

Discussion

By this trend analysis is obtained for analysis of patient satisfaction index from January to July -

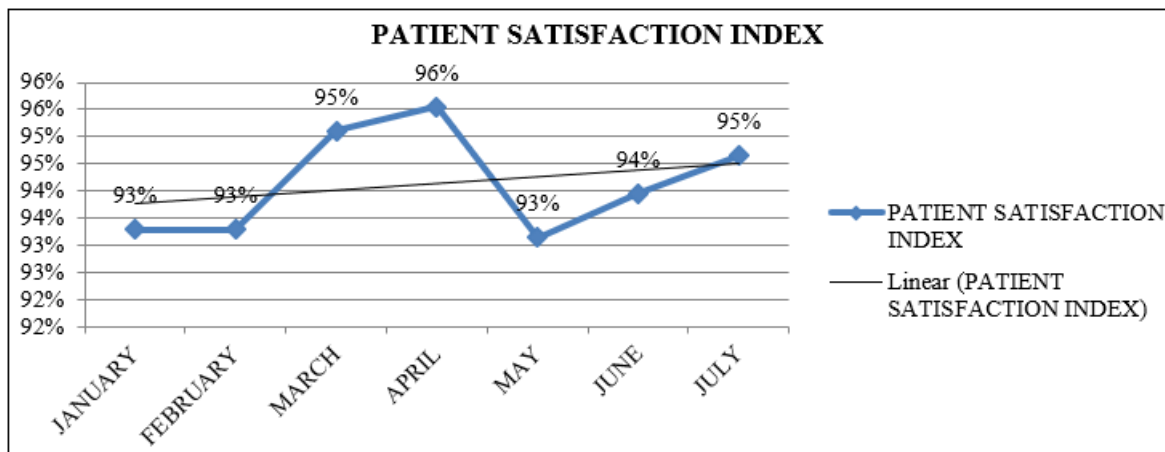


Figure 4: Patient Satisfaction Index

Patient satisfaction index is showing increasing trend from month January to July, also Patient satisfaction index is observed above benchmark which is positive sign for the department.

April and July. Maximum patient satisfaction index is observed in the month of April which is 96%.

Minimum patient satisfaction index is observed in the month of January, February and May followed with March and

RCA - For finding reasons why in some months patient satisfaction index is decreasing, we have analyzed each criterion and obtain trend analysis from them –

Table 8: Patient Satisfaction Index Analysis Criteria Wise

Criteria	January	February	March	April	May	June	July
Appointments	87%	87%	94%	93%	87%	88%	93%
Reception staff	94%	94%	90%	97%	94%	92%	94%
Consultant and doctors	99%	99%	95%	98%	99%	98%	95%
Nurse/technician	91%	91%	97%	94%	91%	96%	97%
Patient education material	95%	95%	95%	96%	94%	94%	94%

It is obtained by calculated each criteria actual and maximum score individually for each month.

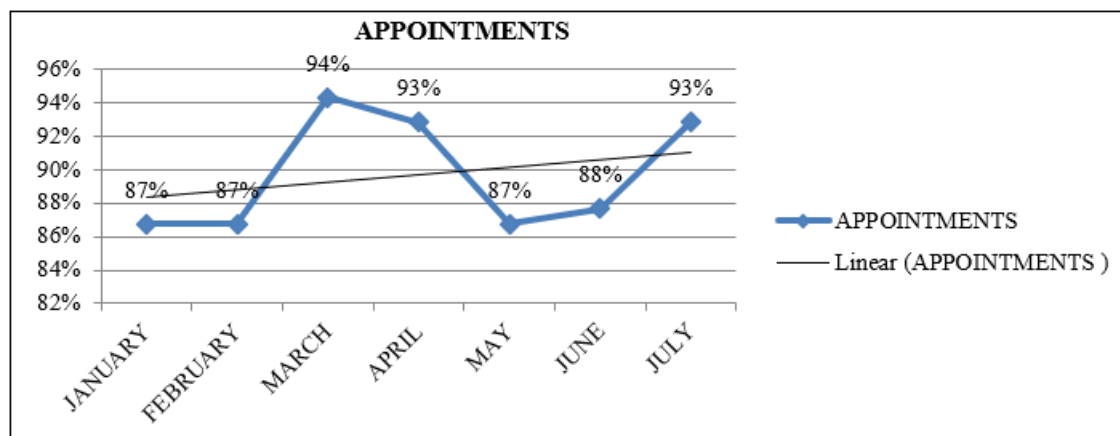


Figure 5: Appointments Analysis

From the above table, this criteria shows increasing level in patient satisfaction From January to July. Maximum level shown in the month of March and minimum is show in January as well as May.

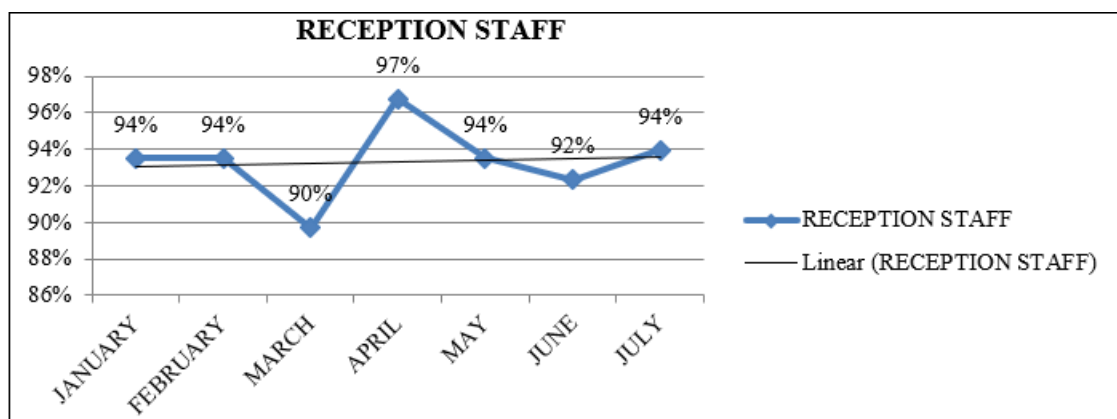


Figure 6: Reception Criteria Analysis

From the above table it is showing that satisfaction level is constant and was maximum in the month of April and minimum is observed I the month of March.

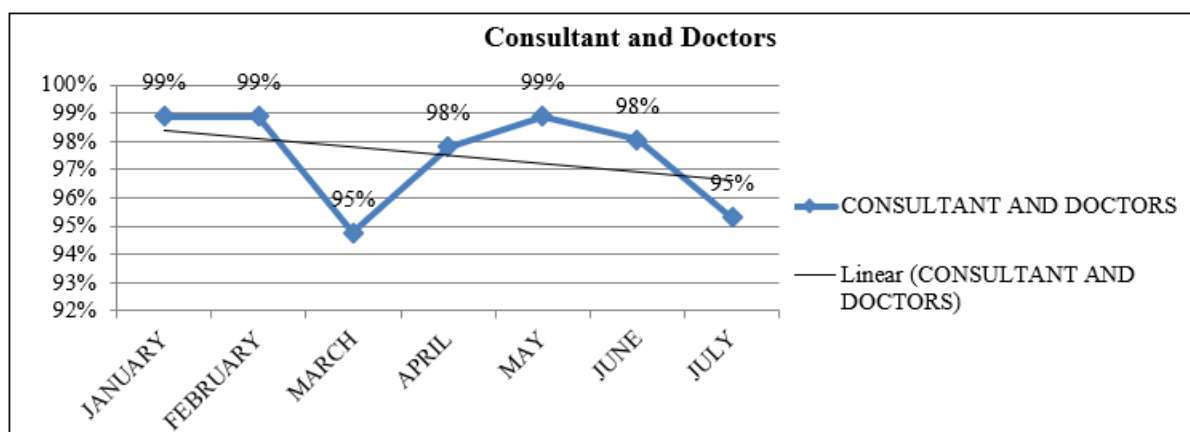


Figure 7: Consultant and Doctors Criteria Analysis

As observed, this criteria shows decreasing trend from Month January to July, Maximum were recorded in January and minimum were recorded in July.

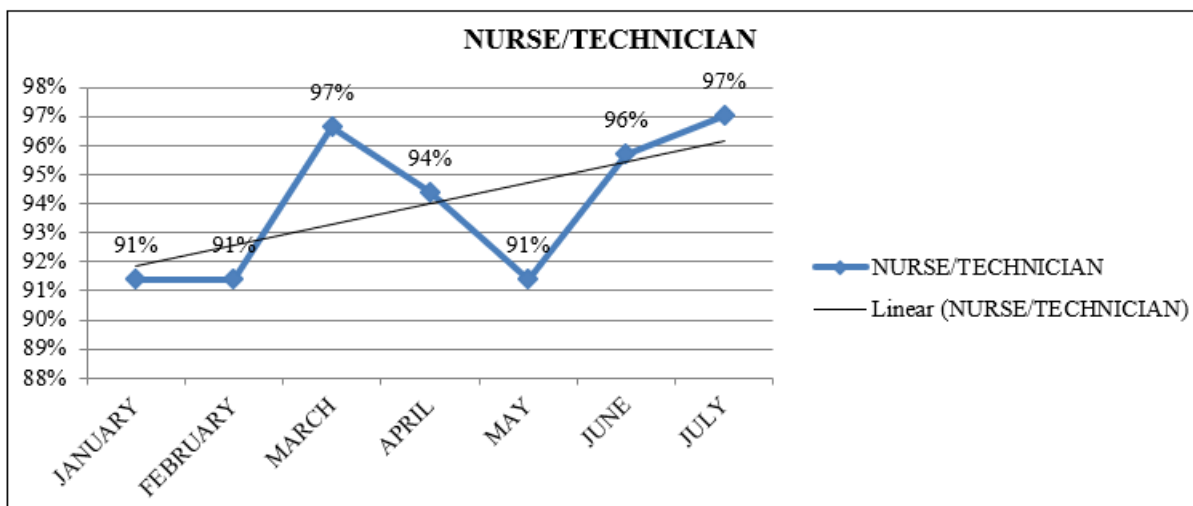


Figure 8: Nurse/Technician Criteria Analysis

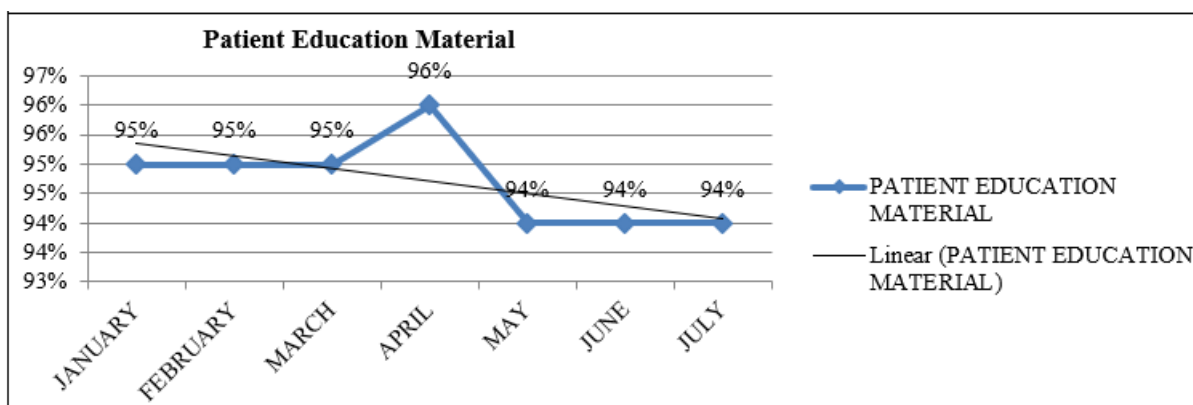


Figure 9: Patient Education Material Criteria Analysis

Patient education material is also showing decreasing trend from January to July.

Though patient satisfaction index for both these categories are above benchmark but it is in decreasing trend.

5. Limitations

Maximum Data was based on past records of waiting time. Incompletely filled feedback form.

6. Conclusion

Factors that are obtained from Fishbone Analysis and value stream mapping are needed to be worked upon so that Patient satisfaction can be enhanced. Staff should have communication with patients and their relatives about rescheduling cancellation appointment. Also it tells whether staff passed the every information about procedure to patient correctly. There should be proper hand hygiene training for staff of respective department. Listening to the patient observing the patient behaviour, communication skills of the staff etc all are an important for maintaining long term relationship with the patient.

7. Recommendations

1) Training -

- Training of staff on various modules should be held monthly or quarterly -
- Training on hand hygiene,
- Training on hospital acquired infection,
- Training on quality care,
- Training on communication skill,
- Training on Effective Communication,
- Training on fire hazards,
- Training on preventive measures,
- Training on patient fall,
- Training on IPSP,
- Training on Mediation Safety,
- Training on departmental policies,
- Training on patient rights,
- Training on Disaster Codes,
- Training on Radiation Safety.

2) Effective Communication -

- Staff should have communication with patients and their relatives about rescheduling cancellation appointment. Also it tells whether staff passed the every information about procedure to patient correctly. There are different portals through which staff can coordinate with patients –

Email, Text messages, through patient portal, through phone call; Communication should be clear, effective and timely.

3) Appointment

- Properly instruct the timings of appointment to the patient.
- Once the appointment is confirmed, to confirm the patient's appointment time, a system - generated SMS can be sent to their phone.
- Scheduling of appointment could be start online.
- Educate the patient that they should come according to the appointment timing not too early a too late.

4) Hand Hygiene Techniques

- There should be proper hand hygiene training for staff of respective department.
- Hand hygiene technique should be proper according to the instructions.
- There should be display of hand hygiene methods or techniques on more than one or two areas in the department.

5) Patient Education Material -

- There should be a proper display of patient rights on the reception areas in Hindi, English and Marathi language in the respective department.
- Staff should educate patient about every detail about the procedure and about the estimation of the respective procedure in the department in understandable and local language s that it can be easy for patient to understand.
- There should be signage's present in the department about every instructions that is related to the patient.

6) Waiting Time

- Waiting time is in increasing order and it is important to reduce the Waiting time, for this following recommendation -
- Time slots should be properly divided so that there will be no overlapping of the patients.
- Educate the patient that they should come according to the appointment timing not too early a too late.
- Staff should intercut the patient before appointment that patient should come with test which is important for the procedure and give patient reminder prior to two days before appointment.
- Staff should instruct properly about the fasting hours that is needed prior to procedure.

References

- [1] Thomas Beyer¹ Johannes Czernin², Variations in Clinical PET/CT Operations: Results of an International Survey of Active PET/CT, Users. February 2011, https://www.researchgate.net/publication/49753713_Variations_in_Clinical_PET_CT_Operations_Results_of_an_International_Survey_of_Active_PETCT_Users
- [2] Husam Asfoor, An Analysis of Waiting Time Reduction in a Private Hospital in the Middle East, 2014, <https://dc.uthsc.edu/cgi/viewcontent.cgi?article=1035&context=hiimpliedresearch>
- [3] Shyamkumar Sriram, Rakchanok Noochpoung, Determinants of hospital waiting time for outpatient care in India: how demographic characteristics, hospital ownership, and ambulance arrival affect waiting time, 2018 - 06 - 22, <https://www.ijcmph.com/index.php/ijcmph/article/view/3095>
- [4] Mensur Biya, Matebu Gezahagn, Bezawit Birhanu, Kiddus Yitbarek, Nigusu Getachew & Waju Beyene, Waiting time and its associated factors in patients presenting to outpatient departments at Public Hospitals of Jimma Zone, Southwest Ethiopia, 25 January 2022, <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-022-07502-8#:~:text=Waiting%20time%20in%20hospitals%20is,at%20a%20hospital%20%5B%5D.>
- [5] imone Berger, Ana Maria Saut, Fernando Tobal Berssaneti, Using patient feedback to drive quality improvement in hospitals: a qualitative study, October 23, 2020. <https://bmjopen.bmj.com/content/10/10/e037641>
- [6] Sathish Raju N, Jayati Bahuguna, Jagiri N Rao, Patient Satisfaction Survey among Inpatients in a Multispeciality Teaching Hospital, South India: A Feedback Analysis, <https://www.jrfhha.com/doi/JRFHHA/pdf/10.5005/jp-journals-10035-1090>
- [7] Manju Christopher; Lallu Joseph, Comparison of the Assessment of Patient Satisfaction Using Active and Passive Feedback, JUNE 30 2021, <https://meridian.allenpress.com/innovationsjournals-JQSH/article/4/3/105/467095/Comparison-of-the-Assessment-of-Patient>
- [8] RAJESWARIT, A STUDY TO ASSESS PATIENT'S SATISFACTION WITH QUALITY OF NURSING CARE, November 2011, <http://dspace.sctimst.ac.in/jspui/bitstream/123456789/1607/1/481.pdf>
- [9] O'Malley MS, Fletcher SW, Fletcher RH, Earp JA. Measuring patient waiting time in a practice setting: a comparison of methods. *J Ambul Care Manage.*1983; 6 (3): 20-7. <https://doi.org/10.1097/00004479-198308000-00006>. PMID: 10260999.
- [10] Xie Z, Or C. Associations Between Waiting Times, Service Times, and Patient Satisfaction in an Endocrinology Outpatient Department: A Time Study and Questionnaire Survey. *Inquiry.*2017; 54: 46958017739527. <https://doi.org/10.1177/0046958017739527>.
- [11] Woldeyohanes TR, Woldehaimanot TE, Kerie MW, et al. Perceived patient satisfaction with in - patient services at Jimma University Specialized Hospital, Southwest Ethiopia. *BMC Res Notes.*2015; 8: 285. <https://doi.org/10.1186/s13104-015-1179-8>.
- [12] Parand A, Dopson S, Renz A, et al he role of hospital managers in quality and patient. safety: a systematic review. *BMJ Open* 2014; 4: e005055. doi: 10.1136/bmjopen-2014-005055.
- [13] aines R, Regan de Bere S, Stevens S, et al, The impact of patient feedback on the medical performance of qualified doctors: a systematic review. *BMC Med Educ* 2018; 18: 173. doi: 10.1186/s12909-018-1277-0

- [14] Coulter A, Locock L, Ziebland S, *et al* Collecting data on patient experience is not enough: they must be used to improve care. *BMJ* 2014; **348**: g2225–4. doi: 10.1136/bmj.g2225
- [15] Farley H, Enguidanos ER, Coletti CM, *et al* Patient satisfaction surveys and quality of care: an information paper. *Ann Emerg Med* 2014; **64**: 351–7. doi: 10.1016/j.annemergmed.2014.02.