Comparative Study on the Process Flow in Out-Patient Department to Improve Patient Waiting Time at Shalby Multispecialty Hospital, Jabalpur

By

Alpana Adhya

Dissertation submitted in partial fulfillment of the requirements of the degree

MBA Hospital and Health Management

Academic year, 2018-2020

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ABSTRACT

Title: A Study on the Process Flow in Out-Patient Department to Improve Patient Waiting Time at Shalby Multispecialty Hospital, Jabalpur.

- **Research Problem:** Shalby Limited is known for its extra ordinary achievement in the area of Joint replacement. First hospital was started by Dr. Vikram I. Shah in the year of 1994 in Ahemdabad. Currently it is running 11 multispecialty hospitals all over the country. OPD waiting time is an important indicator of patient satisfaction. Average 200 patients attend our OPD department every day and long waiting time leads to increase in patient dissatisfaction rate and also decrease the IPD and surgical conversion. Therefore, it is a great challenge for every healthcare provider to provide the services as per the patient's expected benchmark.

- **Methodology:**
  - **Research Design:** Observational and descriptive study.
  - **Setting of the Study:**

    The study includes patients who attended OPDs in hospital for consultations.
  - **Study Population**:
    - **Inclusion Criteria:**

      Both sex and age of patients attended OPD in Shalby Multispecialty Hospital.

      In case of pediatric patients, response was noted from their attendant.
  - **Exclusion Criteria:**

    Emergency patients.

    Patients who refused to provide response.
  - **Duration of the Study**: 3 months (From 1st February, 2020 – 30th April, 2020)
  - **Sampling Technique:** Convenient sampling technique.
  - **Sample Size:**

    Minimum 500 from the secondary database (Estimated patient flow in OPD of a 300 bedded multispecialty hospital is around 1500).Therefore, a minimum 30% of the total patient flow is the sample size.

  - **Statistical Tools:**

    The tools used throughout this study are MS – Excel & MS – Word.

- **Study Plan:**

  The Secondary data was collected from the hospital database which is the time when patient has come to the concerned out-patient department till the time that the concerned consultant begins the assessment (according to NABH indicators). The cause of increased waiting time was asked to the patients and the staffs through the focused group interview.

- **Data Collection Method:**

  The data was collected through primary data collection methods as well as from the secondary sources.

  - **Primary Data:**

  The information related to root causes of the long waiting time was gathered through primary sources such as focused group interviews of the patients and staffs.

  - **Secondary Data:**

  Secondary data was collected through:

  Hospital Database

  Website

  Journals

1. **Key Results:**

   Majority of the patients attend the OPDs between 10 AM to 12 PM (52%) belongs to 30 – 60 years of age group (66.59%). Cardiology and Orthopedics OPD are running with maximum patient flow (Cardiology 21% & Orthopedics 20%). The Average OPD waiting time was 27±2 minutes. (Data shows from October to January). Looking at the post analysis, it clearly indicated that waiting time has reduced to 24±2 minutes which is still 9 minutes delay than the standard waiting time according to the benchmark of the organization.

2. **Conclusion:**

   Many patients face difficulties during the peak time specially between 10 AM to 2 PM. Lack of sufficient staff in registration and billing counter during that time and lack of planning in queuing process can be the root causes of long waiting time.

THE IIHMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **"A Comprehensive the Process Flow in Out-Patient Department and to Improve Patient Waiting Time at Shalby Multispecialty Hospital, Jabalpur"** submitted by **Dr. Alpana Adhya**, enrolment no. **IIHMR-U/01/2018-20/0071** under the supervision of **Dr. D.K. Mangal**, for award of MBA in Hospital and Health Management carried out during the period from **February 5, 2020** to **May 4, 2020** embodies my original work and has not formed the basis for the award of any degree, diploma associateship, fellowship, titles in this or any other institute or other similar institution of higher learning.

Dr. Alpana Adhya

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A Study on Process Flow in Out-patient Department to Improve Patient Waiting Time at Shalby Multispecialty Hospital, Jabalpur

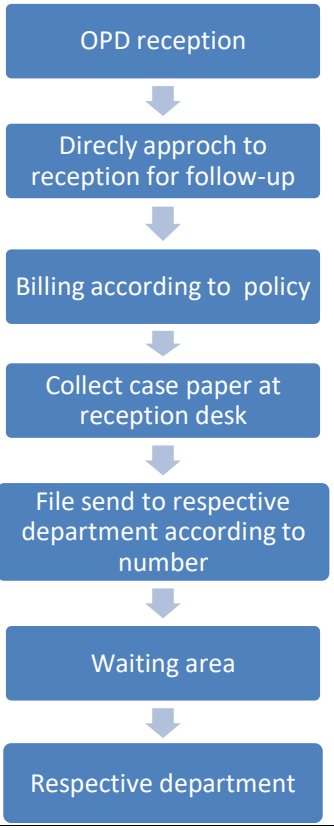
▪ Introduction:

OPD (Outpatient) service is one of the most essential services in hospitals. Among the other services, as many patients convert into hospitalization, OPD service is critical for revenue generation. The healthcare sector is facing continuous pressure from not only the national political policies but also from the external competitive market situation. OPDs are often identified as the first point of interaction between patients and hospitals. Therefore, the impression of the hospital's OPD often makes a significant impact on the patients about the reputations towards the hospital. Therefore it is essential to put maximum effort to provide the OPD services more efficiently. It is necessary to ensure that these services provide an excellent experience to the customers. Patients are now more aware of the healthcare facilities and expect the services to be more effective and efficient from the providers. With the increase in patient flow and outpatient volume, there may be an increase blockage which turns to long waiting times. As patients are now more concerned about the time and money they are spending to get the facilities, a failure in providing the expected services leads to an increase in patient dissatisfaction. According to the Study, on average, only 5% of dissatisfied customers complain about the service. Others simply go over to the competitor (Marketing white book (2016) India report on the Healthcare sector). Hence, it is a high challenge for the healthcare provider to reduce their waiting times in OPDs that they can meet a more massive patient flow per day and also bringing the services more efficient in the OPD area.

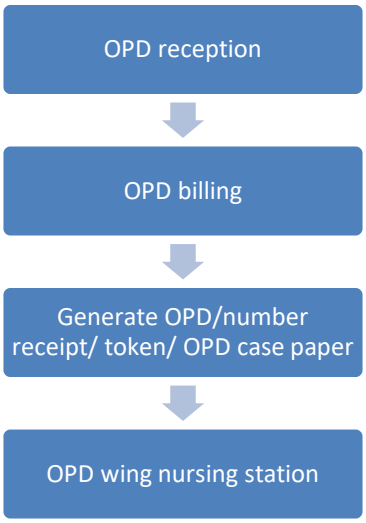
In Shalby Multispecialty Hospital, Jabalpur unit there are three wings in the ground floor having a total 32 OPD rooms. Among these, 22 are functional. There are two registration counters and two billing counters are specified for the OPD patients. A large number of patient traffic can be seen daily in the waiting and the registration area. The OPD opens from Monday to Saturday, 10 AM – 5 PM. The OPD staffs are generally very busy during this period handling long waiting queues.

- **Functions of Out-patient Department:**
  - To provide effective treatment on an ambulatory basis.
  - Control disease by early diagnosis.
  - Screen and investigate cases to confirm whether hospitalization is required or not.
  - Facilitate screening and investigations for admission to the hospital.
  - To promote prevention and promotion of health services.
  - To promote health education.
- **Process Flow:**

- **Process Flow for OPD Follow–up Patient:**



- **Process Flow for New Patient:**



- **Literature Review:**

Author	Ravikant Patel[1], Hinaben R. Patel[2]
Year	4th March,2017
Location	Gujrat Medical Education Research Society Hospital, Valsad, Gujrat, India

  - *Title:* A Study on waiting time and out-patient satisfaction at Gujarat medical education research society hospital, Valsad, Gujarat, India.
  - *Introduction:* This study focused mainly on two factor. The first one is outdoor waiting time and the other one is patient satisfaction. Long waiting time in out-door department not only measure the efficiency of the hospital services but also directly leads to patient dis-satisfaction and decrease in OPD-IPD conversion. This Study also focused on another eight factors which can affect the patient satisfaction in out-door department.
    - Out patients department services.
    - Logistic arrangement in the outpatients department.
    - Waiting time.
    - Facilities.
    - Perception about the performance of the staff,
    - Appointment system.

- Behavior of staff.
- Support service.

- *Methodology:*
  - *Study Design:* Cross-sectional observational Study
  - *Study Setting:* Out-door department of Gujrat Medical Education Research Society Hospital, Valsad.
  - *Study Population:* OPD patients only including all ages and sex. For pediatric patients, responses have been noted from patient attendant.
  - *Sample Size:* Total 135 patients.
  - *Sampling Techniques:* 15 patients randomly selected from each of 9 OPDs.
  - *Analysis Plan:* Data was analyzed with the help of MS Excel.
- *Result:* Analysis was done based on age, sex and level of education of the patients which showed majority of patients were female and having an age group between 20 to 40 years. Above 50% of patients registered after 20 minutes of waiting. Many of the patients have an impression that the doctors were not coming on time or the doctors were not available in public hospitals. Maximum patients were satisfied with the behavior of the staffs while infrastructure was not up to the standard.
- *Recommendation:*
  - Patient satisfaction assessment should be conducted regularly.
  - In OPDs, complaint and suggestion box should be kept, so that patients can freely put their complaints and suggestions.
  - A help desk facility should be provided nearby the registration counter for the patient's convenience in finding OPDs.
  - Sign board directing various OPDs and other departments should be in local language and located at properly visible sites or create some color coding method for easy access.

▪ Problem Statement:

It has been established that, 8 – 19% of OPD patients need hospitalization (source: International Journal of Community Medicine and Public Health Patel R *et. al.*, Int. J. Community Med Public

Health., 2017 Mar; 4(3): 857 – 863).OPD waiting time is an essential indicator of patient satisfaction. It refers to the time a patient waits in the clinic before being seen by one of the clinic medical staffs. Long waiting time leads to an increase in patient dissatisfaction rate and also decrease the IPD and surgical conversion. Queuing is one of the significant challenges for OPDs in healthcare services. Therefore, it is a great challenge for every healthcare provider to provide the services as per the patient's expected benchmark.

- ## Problem Justification
  - As the consultation time varies for doctors and patients based on the nature of treatment, the waiting patients get confused about their time of visiting.
  - In many cases, consultants do not able to arrive at the right time which led to long waiting time.
  - Sometimes, patients arrive in the waiting area before or after scheduled time. The waiting time increases due to the management of the situation.

- ## Research Question
  - What are the factors leading to an increase in turn-around time in OPD?

- ## Objectives
  - To identify the root causes which lead to delay in the consultation process.
  - To map the process and identify wastes in the process.
  - To provide waste-free process that can improve in patient waiting time.

- ## Methodology

  - **Research Design:** Observational and descriptive Study.

  - **The setting of the Study:**
    The Study includes patients who are attended in OPDs in hospital for consultations.

- **Duration of the Study**: 3 months (From February 1, 2020 –April 30, 2020)
- **Sampling Technique:** Convenient sampling technique.

- **Sample Size:**

  Minimum 500 from the secondary database (Estimated patient flow in OPD of a 300 bedded multispecialty hospital is around 1500).Therefore, a minimum of 30% of the total patient flow is the sample size.

- **Statistical Tools:**

  The tools used throughout this Study are MS – Excel and MS – Word. MS – Excel was used to analyze the data and MS – Word was used to summarize the whole project report.

- **Inclusion Criteria:**
  - Both sex and age of patients attended OPD in Shalby Multispecialty Hospital.
  - In the case of pediatric patients, response was noted from their attendant.

- **Exclusion Criteria:**
  - Emergency patients.
  - Patients who refused to provide response.

- **Study Plan:**

  The Secondary data was collected from the hospital database which is the time when patient has come to the concerned out-patient department till the time that the relevant consultant begins the assessment (according to NABH indicators). The cause of increased waiting time was asked to the patients and the staffs through the focused group interview. The process was mapped according to the root cause analysis.

- **Data Collection Method:**

  The data was collected through primary data collection methods as well as from the secondary sources.

- **Primary Data:**

  The information related to root causes of the long waiting time was gathered through primary sources such as focused group interviews of the patients and staffs.

- **Secondary Data:**

  Secondary data was collected through:

  - Hospital Database
  - Website
  - Journals
  - Text Books

- **Data Analysis Plan:**

Data was analyzed in MS – Excel. Average waiting time for OPD consultation was calculated and compared with the standard waiting time then root cause analysis was done and corrective and preventive action was suggested according to the root cause.

Results:

Table – 1 shows that, out of 422 patients, majority of the patients attending the OPDs belong to 30 – 60 years of age group (66.59%) followed by 60 – 70 years of age group (15.88%).

Table 1: Age – wise distribution of patients attending the OPDs.

Age (years)	Total numbers	Total numbers (%)
0-10 years	6	1.42%
11-20 years	13	3.08%
21-30 years	27	6.40%
31-40 years	76	18.01%
41-50 years	87	20.62%
51-60 years	118	27.96%
61-70 years	67	15.88%
71- 80 years	23	5.45%
Above 80 years	5	1.18%

Figure – 1:Age – wise patients distribution

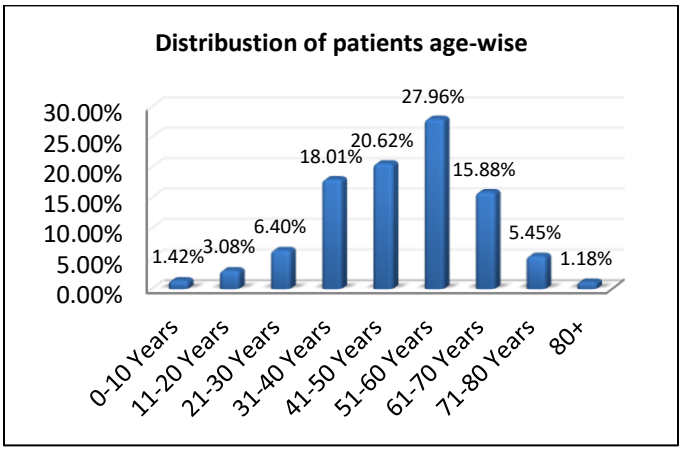
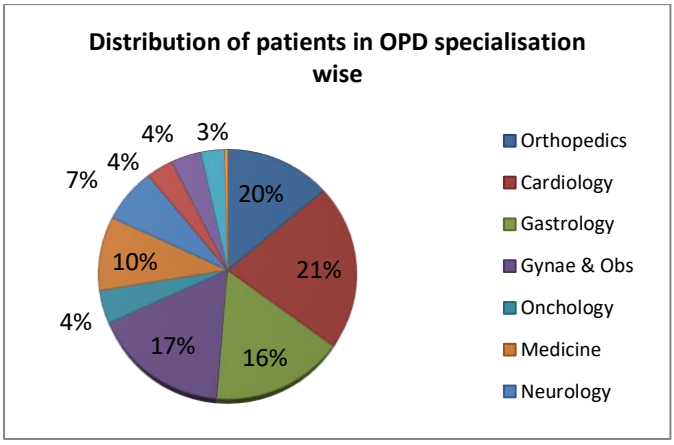


Figure – 2: Specialization wise distribution of patients



Figure– 2 shows, around 90.09% patients attending OPD are consulting in Orthopedics, Cardiology, Gastrology, Gynae and Obs and Medicine departments.

Table – 2: Month – wise Calculation of TAT

Month	TAT
October	29:21 mins
November	29:08 mins
December	25:02 mins
January	25:11 mins

The data from October to January shows the TAT of OPD waiting was average 27:10 minutes. In October, November, December, and January the TAT of waiting were 29:21 minutes, 29:08 minutes, 25:02 minutes and 25:11 minutes, respectively.

The organization has set the standard waiting time is 15 minutes. Therefore, the delay from the usual waiting time is around 12 minutes.

is 15 minutes. Therefore, the delay from the usual waiting time is around 12 minutes.

Figure – 3: OPD TAT analysis (October to January)

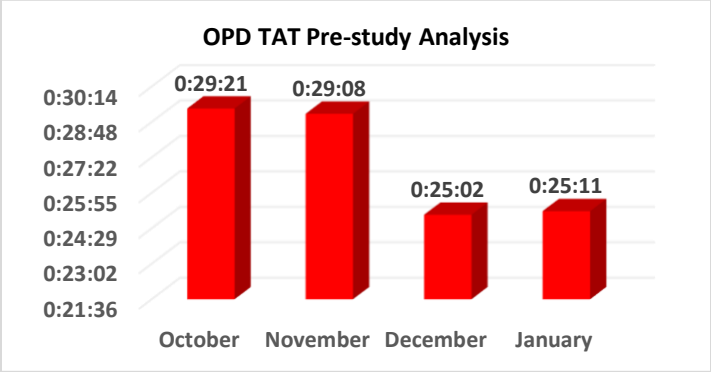
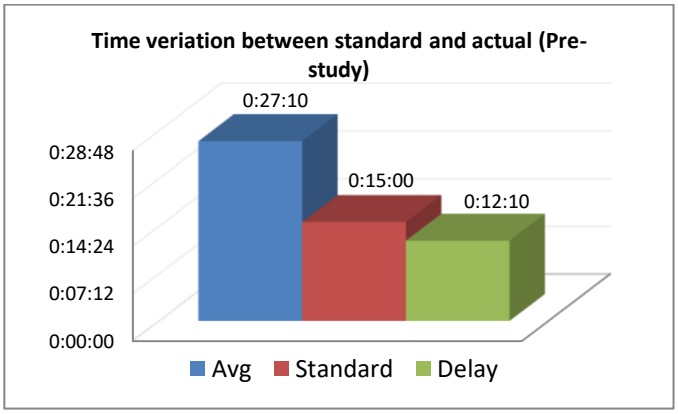


Figure – 4: Time differrance between average and standard time

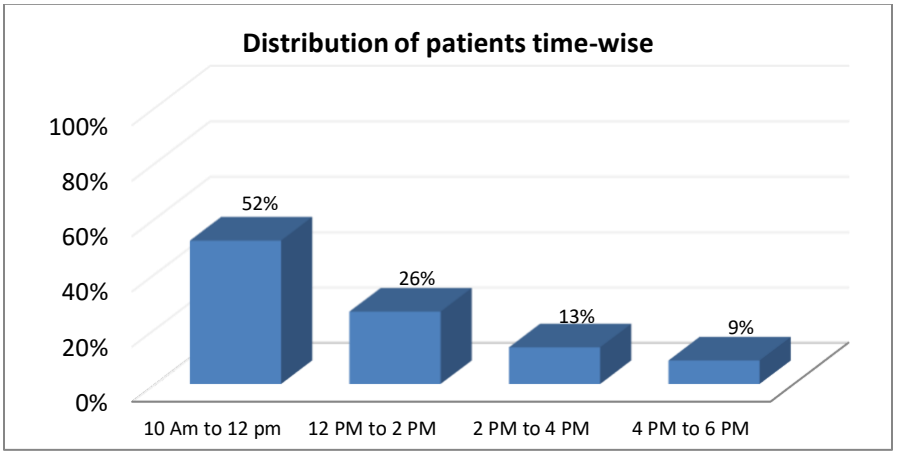


According to pre-study patient data from October to January, most of the registration was done between 10 AM to 2 PM. Especially it has been observed that, maximum crowding happened in registration desk between 11 AM to 2 PM.

Table – 3: Time – wise patient distribution

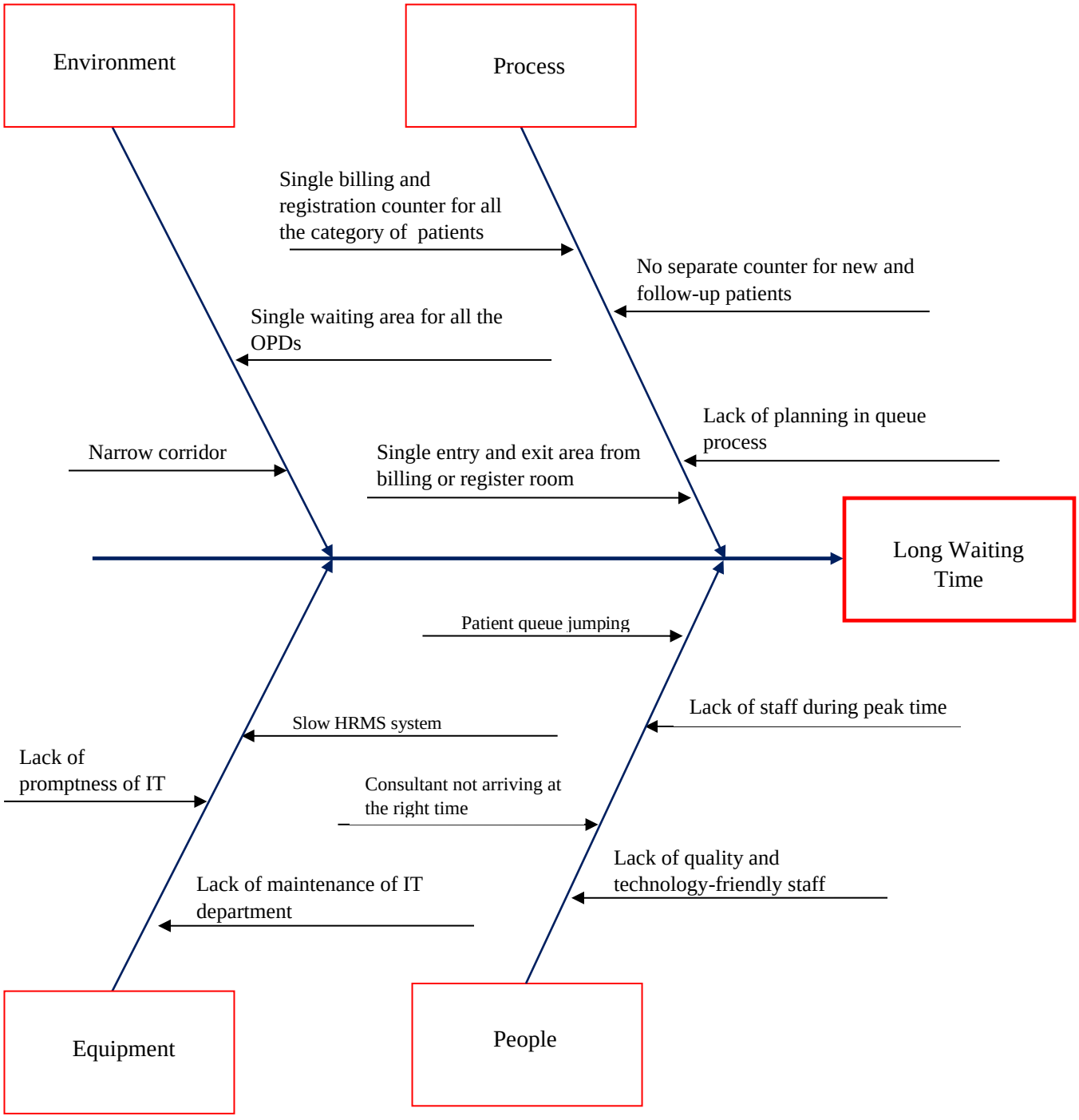
Time	Count of Patients	Percentage
9 AM – 12 PM	317	52%
12 PM – 2 PM	160	26%
2 PM – 4 PM	81	26%
5 PM – 6 PM	52	9%

Figure – 5: Time – wise distribution of patients



At the start of this study, it was observed that, there is single registration desk for the registration of all classes of patients (e.g. – self-pay, CGHS, ECHS, TPA etc.) and staffs were getting exhausted especially during the rush hour. Patients are also getting irritated when they have to wait for long time after the registration.

- **Root Cause Analysis**



- **Pilot Study:**
  - Minimum two staffs were present during the rush hour, especially between 11 AM to 2 PM.
  - Separate waiting area for the cardio patients, as a high percentage of patients came for cardio consultation.

After doing the pilot Study, the data shows the average turn-around time reduces to 24 minutes from 27 minutes.

Figure – 6: OPD TAT analysis (February and March, week – wise)

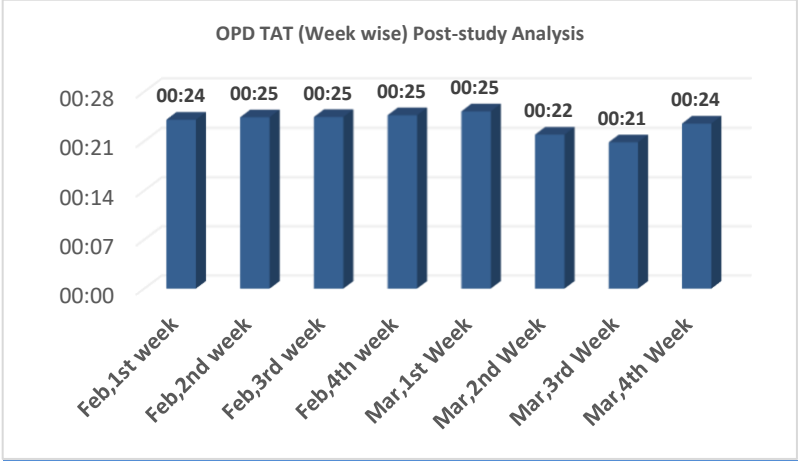
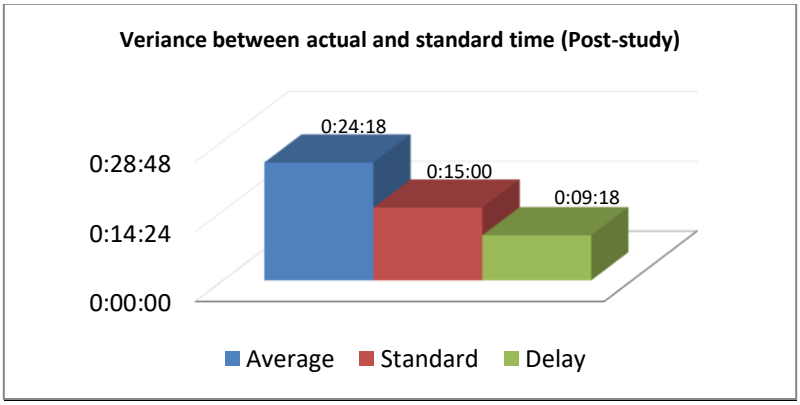
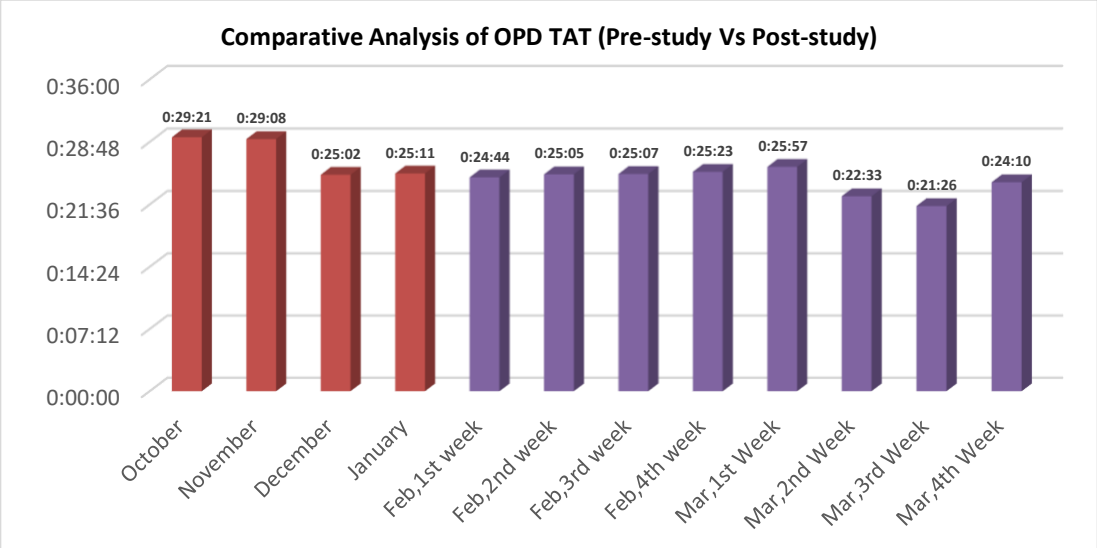


Figure – 7: Difference between actual and standard time (post – Study analysis)



- **Comparative Analysis:**

Figure – 8: Comparative analysis between Pre-Study and Post-Study



▪ Discussion:

Shalby Multispecialty hospital is a tertiary care hospital and is well known for its extra ordinary achievement in the area of joint replacement. First hospital was started by Dr. Vikram. I. Shah in the year of 1994 in Ahemdabad. Currently, there are 11 multispecialty hospital are functioning all over the country. Out-door department is the service which can create the foremost impression of the entire services of the hospital. OPD waiting time is a measurement of patient satisfaction.

In our Study majority of the patients are having the age group of 30 – 60 years followed by 60-70 years. Maximum patients flow is seen in cardiology and orthopedics department. The data from October to January showed the turn-around time of OPD waiting was average 27:10 minutes which is around 12 minutes more than the standard TAT as per the benchmark of organization.

The maximum crowd was gathered between 10 AM. to 2 PM.

The root cause analysis shows the possible cause of the long waiting time which are

1. *Environment:*

   Narrow corridor in the registration area and in-front of the OPD rooms could be a cause of long queue as patients cannot move comfortably in the narrow space.

   Single waiting area for all the OPDs can create confusion among patients. Unavailable of proper signage also a big reason of patient dissatisfaction.

2. *Process:*

   Single billing and registration counter for all the category of patients led to chaos. Though staffs were giving their maximum effort. However, for a single staff it is difficult to manage the patients, specially at the rush hours.

   Also, Single counter for new and follow-up patients created a large queue. Single entry and exit area from billing or register room a factor for long waiting time.

3. *Equipment:*

   Slow HRMS system led to delayed process.

   Inefficiency and lack of promptness of IT department staff.

4. *People:*

   Lack of staffs at the rush hours.

   Lack of quality and technology-friendly staff led to make slow process.

After making the root cause analysis a pilot Study was done for 3 months to observe the improvement.

- Minimum two staffs were present during the rush hour, specially between 11 AM to 2 PM.
- Separate waiting area was allocated for cardio patient as a high percentage of patients came for cardio consultation.

Post-Study analysis data showed that the average TAT has reduced to around 24 minutes which is still 09:18 minutes above the standard timeline.

Conclusions:

This Study is focused on the improvement of patient waiting time in OPD patients of Shalby Multispecialty Hospital, Jabalpur unit. The average waiting time was 27 minutes during the period from October to January. After, taking necessary steps it was reduced to average 24 minutes.

Recommendation:

- A large number of patients visit the hospital for the consultation in cardiology department. Therefore, a separate patients waiting area along with registration desk and diagnostic facilities can be set up to utilize the free floor space in the hospital.
- A implementation of quarterly staff training program can benefit in providing services to the customers efficiently.
- Small beverage stall in the patients waiting area can be installed. During the waiting period patients can relax before going through the hospital procedure.

References:

1. https://www.iihmr.edu.in/student-dissertation/2015-2017/process-mapping-and-identification-of-bottlenecks-leading-to-increase-in-turnaround-time-of-patients-in-the-outpatients-department.
2. file:///C:/Users/Dr.%20Anupam/Desktop/Patient%20waiting%20time.pdf
3. file:///C:/Users/Dr.%20Anupam/Desktop/A_Study_on_waiting_time_and_out-patient.pdf
4. file:///C:/Users/Dr.%20Anupam/Desktop/A%20Strategy%20to%20Reduce%20the%20Waiting%20Time%20at%20the%20Outpatient%20Department%20of%20the%2