A Study on Time Motion Study on Outpatient Services& Detectingthe Factors Contributing to The Delay in The Consultation Process in A City Based Hospital Gurugram

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I INTRODUCTION

- TIME MOTION STUDY:

A time and motion study are the analysis of the exact motions required by a person to complete a task, as well as the time required to do so. Once this information has been collected, the analyst devises a more efficient approach by stripping away certain actions and replacing others.

A time and motion study is used to analyse work efficiency through the observation and timing of tasks. It can help you see where your day could be more efficient, saving you time and energy, which everyone could use. You can perform one on yourself or observe another person. First, you must decide what method you'll use from real-time observation to a sampling approach, and then you'll observe and time the task. After you've completed the study, you can use the data to create a more efficient work process.

A time motion study is another way of saying time and motion study, which is a business efficiency technique that involves observing and timing tasks to improve work methods and productivity. It combines the time study work of Frederick Winslow Taylor with the motion study work of Frank and Lillian Gilbreth.A time motion study can be conducted in different ways, such as using real-time observation, work sampling, or video recording.

II OBJECTIVES OF THE STUDY

1. To identify the inefficient and time-consuming activities in a process and eliminate them to improve overall efficiency.
2. To standardize work processes, which ensures that every employee follows the same process and the same method of performing a task, resulting in consistent and high-quality output.
3. To optimize the use of resources such as manpower, machinery, and materials, which reduces wastage and improves productivity.
4. To identify bottlenecks in the patient flow, including areas where patients may be waiting for extended periods. The study can help determine the best way to reduce wait times and improve the overall patient experience.
5. To identify areas where staff productivity can be improved. By understanding how long it takes staff to complete certain tasks.
6. To standardize work processes, which ensures that every employee follows the same process and the same method of performing a task, resulting in consistent and high-quality output.
7. To Establishing standard times for completion of specific tasks.
8. To reduce the cost of running an OPD.
9. To also improve layout and design of plant and equipment and working environment.

III METHODOLOGY

- Population: Sample of 33,368 people was taken into study and their data was collected.
- The sampling frame: The frame is list of patients visited the OPD during time period of January 15, 2024, to April 16, 2024i.e
- January = 7791,
- February = 8436,
- March = 9540,
- April = 7601.

- Sampling method: To study the Project, a Simple Random Sampling technique is used.
- Data Collection: Collection of data is done by Secondary Data & through previous records i.e.; Primary data was collected through Observation.

IV REVIEW OF LITERATURE

- A Time-Motion Study in the Immunization Clinic of a Tertiary Care Hospital in Odisha

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Abstract: -
Background: A time-motion study helps us to determine the amount of time necessary to perform a specific movement or task.
Aims: To determine the activity time at different service delivery points.
Methods: The present observational cross-sectional study was done in the immunization clinic of Kalinga Institute of Medical Sciences (KIMS), Bhubaneswar, Odisha, over 2 months from 01/08/2020 to 30/09/2020. The sample size was 327. The study population included the mothers/caregivers attending the immunization clinic with their children. Predesigned and pretested schedules were used to record time and other information, while pre-synchronised stopwatches were used to record the total activity time at various stations of the immunization clinic.
Results: The mean total time taken (from entry to exit) for each participant to complete the immunization process was 36.6±15.7 minutes. The mean total time was maximum during registration and checking of immunization status, 14.3± 6.2 minutes. This was followed by the mean time for vaccination proper which was 10.8±4.5 minutes. The highest number of beneficiaries visiting the immunization clinic was on Wednesday and the mean total time at all service delivery points was maximum on Wednesday (42.5±19.8 minutes) between 10 am - 12 pm. Conclusion: Time management at all levels of the health care system is the need of the hour which has to be addressed. Efficient functioning of the immunization clinic is therefore required to achieve the goal of universal immunization. Conclusions: In this study, there was a statistically significant correlation between IDA and simple FS. Keywords: Time motion study, Immunization, Vaccine, Tertiary care hospital, Odisha, Eastern India.

- Operational Efficiency of an Immunization Clinic Attached to Rural Health Training Centre in Delhi, India: A Time and Motion Study

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Abstract: -
Background: Obtaining baseline data about current patterns of work is important for assessing the effects of interventions designed to improve care delivery. Time and motion studies allow for the most accurate measurement of structured components. Therefore, the present study was conducted to study the operational efficiency of an immunization clinic in Delhi, India.
Methods: Observational cross-sectional study was conducted at the immunization clinic of Rural Health Training Centre in Delhi, India, from January 2014 to March 2014. The study composed two stage evaluations, a passive observation and a time and motion study.
Systemic random sampling method was used to select 863 mothers/caregivers attending the immunization clinic.
Results: At the immunization clinic, the study participants spent 64.1% of their total time in waiting. For new cases, the meantime taken for initial registration and receiving postvaccination advice was found to be significantly longer than old cases. Delivering health care services took more time during Mondays and also during the first hour of the day. Conclusion. Results of this study will guide public health decision-makers at all government levels in planning and implementation of immunization programs in developing countries.

Taken from: -Hindawi Publishing Corporation Advances in Preventive Medicine Volume 2014, Article ID 671963, page- 1, Received 5 August 2014; Accepted 20 October 2014; Published 6 November 2014.

- A Time Motion Study in the Immunization Clinic of a Tertiary Care Hospital of Kolkata, West Bengal

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Abstract: -
Background: A time and motion study is used to determine the amount of time required for a specific activity, work function, or mechanical process. Few such studies have been reported in the outpatient department of institutions, and such studies based exclusively on immunization clinic of an institute is a rarity.
Materials and Methods: This was an observational cross-sectional study done in the immunization clinic of R.G. Kar Medical College, Kolkata, over a period of 1 month (September 2010). The study population included mother/caregivers attending the immunization clinics with their children. The total sample was 482. Pre-synchronized stopwatches were used to record service delivery time at the different activity points.
Results: Median time was the same for both initial registration table and nutrition and health education table (120 seconds), but the vaccination and post vaccination advice table took the highest percentage of overall time (46.3%). Maximum time spent on the vaccination and post vaccination advice table was on Monday (538.1 s) and nutritional assessment and health assessment table took maximum time on Friday (217.1 s). Time taken in the first half of immunization session was more in most of the tables.
Summary: The goal for achieving universal immunization against vaccine-preventable diseases requires multifaceted collated response from many stakeholders. Efficient functioning of immunization clinics is therefore required to achieve the prescribed goals. This study aims to initiate an effort to study the utilization of time at a certain health care unit with the invitation of much more in depth analysis in future.

Taken from: - Indian Journal of Community Medicine/Vol 37/Issue 1/January 2012,
page-30.

- A time motion study in the OPD clinic of a rural hospital of West Bengal

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Abstract: A time motion study was conducted to know the time taken in different service delivery points in outpatient department and to assess the perception of beneficiaries regarding the total time spent in the OPD. The study was conducted at Tarakeswar rural hospital from January to April 2014. About 192 patients were included in the study. According to 46.88 % population, total time was too long. 42.70 % population were not satisfied about the total time taken in the OPD. 29.16 % population had given the suggestion. 42.86 % of the population (who had given any suggestion) suggested appointing more doctors. Much more in-depth research work on Time Motion study is required for proper time management in different health care delivery system and subsequent remedial steps can be taken accordingly.
Key words: Time motion study, OPD, patient satisfaction, rural hospital.

Taken from: - IOSR Journal of Dental and Medical Sciences (IOSR-JDMS) e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 13, Issue 7 Ver. II (July. 2014), Page 34-37

- A Time Motion Study of Healthcare Delivery System at General OPD of Rural Hospital of West Bengal

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Abstract: -
Background: Outpatient Department (OPD) congestion and long waiting time in OPD is an important challenge for hospital administration.

OBJECTIVE: A time motion study was conducted in OPD of Domjur Rural Hospital on around forty patients by simple observation technique to find out the time spent in various service delivery sections and the overall satisfaction of patients regarding total time spent in OPD.
METHODS: Data obtained by simple observation technique and patient interview.
RESULTS: Average waiting time in various sections was observed and statistically analyzed. Study revealed maximum time is spent by a patient in waiting outside OPD for consultation but time for consultation is very less. Interview of patients were also conducted regarding their satisfaction and suggestions were provided to hospital management for implementation of newer techniques in order to reduce OPD congestion.
Keywords: time-motion, healthcare delivery system, patient satisfaction, Rural Hospital.

Taken from: - International Journal of Research and Review (ijrrjournal.com), Vol.7; Issue: 2; February 2020, page- 254

- A time motion study to evaluate the average waiting time in OPD with reference to patient satisfaction in the setting of state-level AYUSH Hospital (India)

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2 Ayurvedic and Unani Tibbia College, India

Abstract: -
The outpatient department (OPD) is the first point of contact of a hospital with patients and serves as the shop window of the hospital. The care in the OPD indicates the quality of services provided by the hospital and is reflected by patient satisfaction. Overcrowding contributes significantly to patient dissatisfaction because of the long waiting and less consultation time. Data on the services of AYUSH systems in India are scarce, although AYUSH systems are now a part of the national health-care delivery structure. Therefore, this study aimed to investigate the services rendered by the AYUSH hospitals to understand the lacunae, help improve the system, and increase the accessibility among the masses. A time–motion study (TMS), including 100 patients from the state-level AYUSH Hospital, New Delhi, was conducted to assess the average waiting time of patients and the level of satisfaction of patients in terms of services provided by the hospital. The duration of this study was 15 working days. The data were gathered by TMS and direct patient interviews. The findings revealed that, on average, a patient spent nearly 2 h in the OPD from its arrival to exit. The major reason for this prolonged waiting time was the time for consultation, which was 1 h 10 min, and almost 16 min at the pharmacy. Moreover, the average time a patient spent with the doctor for consultation was 3 min. In conclusion, the patients were least satisfied by the OPD waiting time, consultation time, and pharmacy services.

Key words: AYUSH Services, ISM and H, OPD, patient satisfaction, time–motion study, TMS.

Taken from: -Medical Journal of Islamic World Academy of Sciences doi: 10.5505/ias.2019.89410 2019;27(3): 71-76, January 2019, page- 71.

V RESULTS AND OBSERVATIONS (ANALYSIS)

Analysis is the process of categories, ordering, and summarizing the data so as to obtain research answers and test hypothesis.
The main objective of this part is to deal with the analysis and interpretation of the data collected 33,368[N= 33,368] during the course of internship period. The study was done to observe the time taken in each and every activity in the process of consultation and the reasons why consultation process is getting delayed. And also, to find possible ways to escape the delay happening in the consultation process in the outpatient department.
Presentation of data: To establish base for the discussion of the study a proper step by step manner has been followed here, so the obtained data is tabulated, organized, analysed, and interpreted by using descriptive and inferential statistics.

✓ Section I: TOTAL TIME TAKEN FOR CONSULTATION, BY MONTH:

FIG: BY MONTHS	JANUARY (in minutes)	FEBRUARY (in minutes)	MARCH (in minutes)	APRIL (in minutes)
SUM OF TIME TAKEN FOR CONSULTATION	376,539.03	372,449.4	691,459.2	449,371.12
TOTAL NUMBER OF PATIENT CONSULTED	7791	8436	9540	7601
RESULT	**48:33**	**44:15**	72:48	59:12
BENCHMARK	30:00	30:00	30:00	30:00

TABLE 4.1

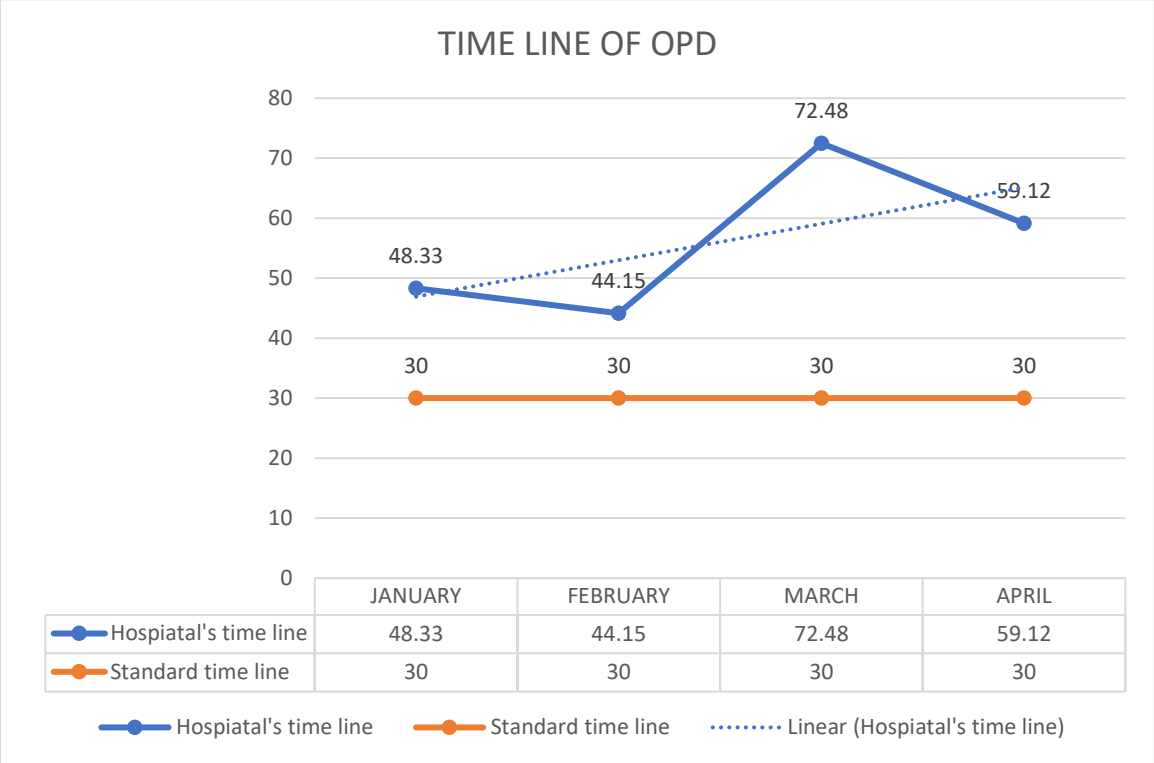

FIGURE 4.1

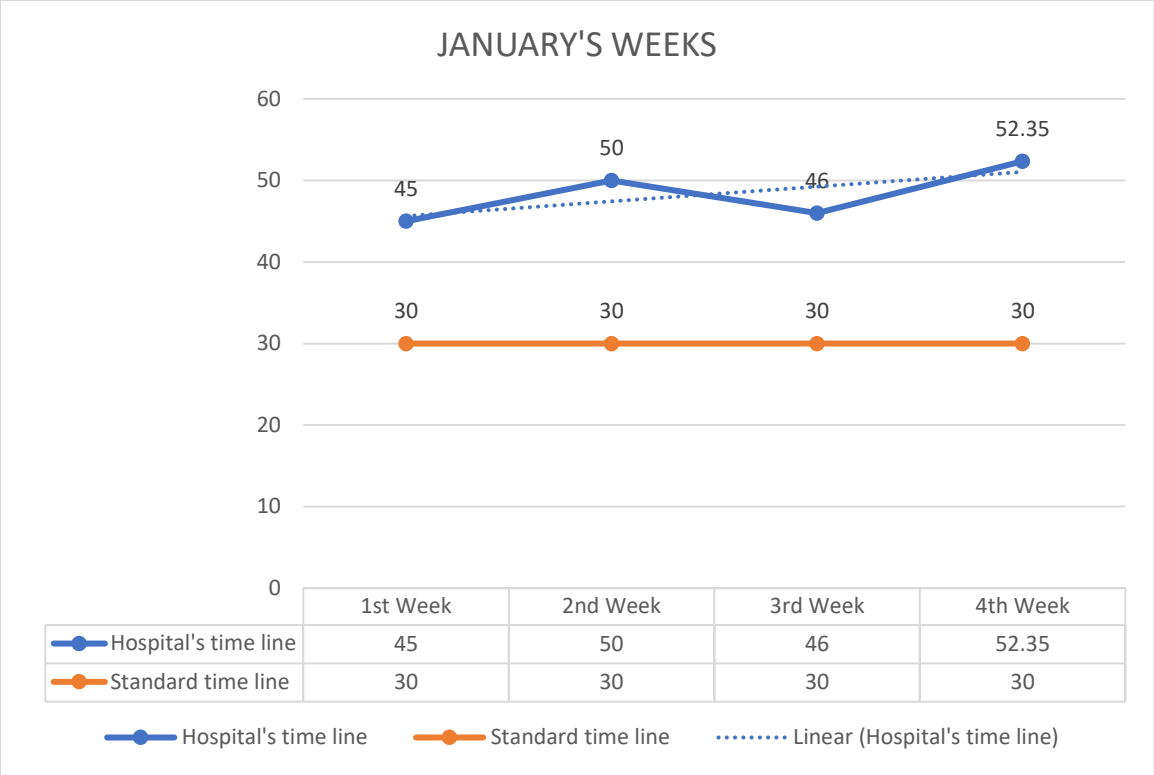

FIGURE 4.2

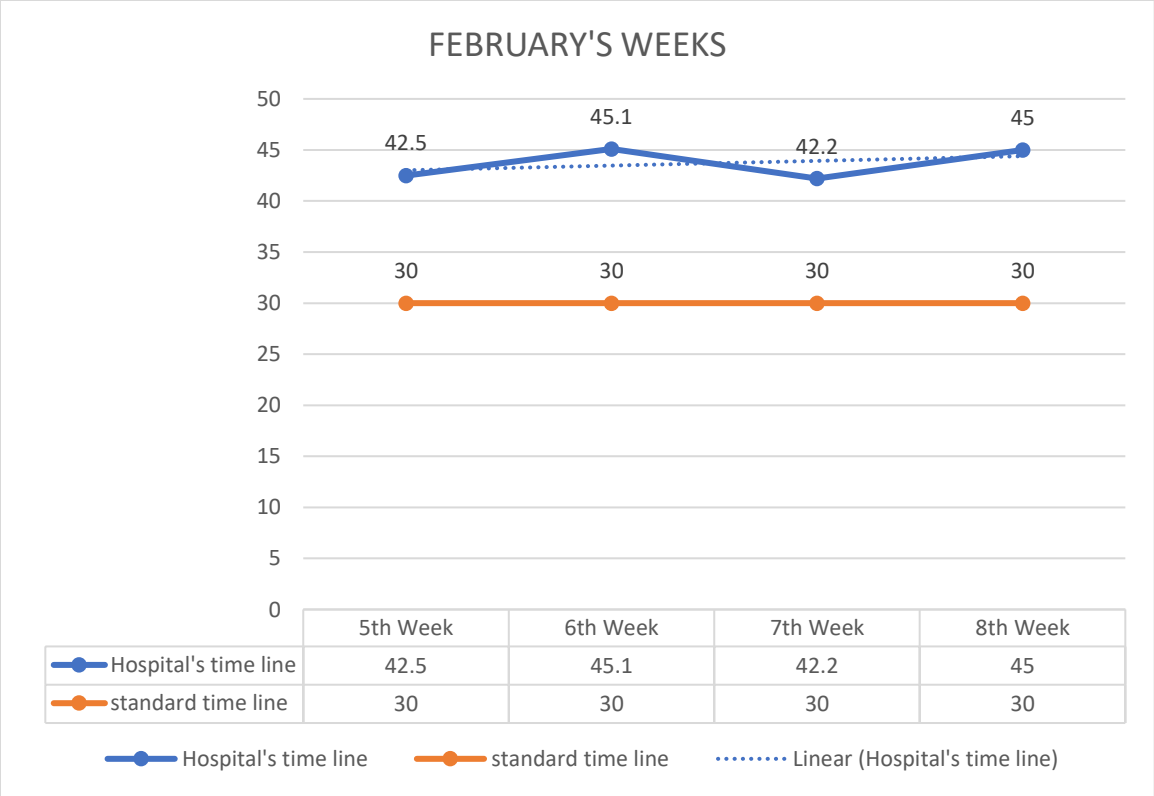

FIGURE 4.3

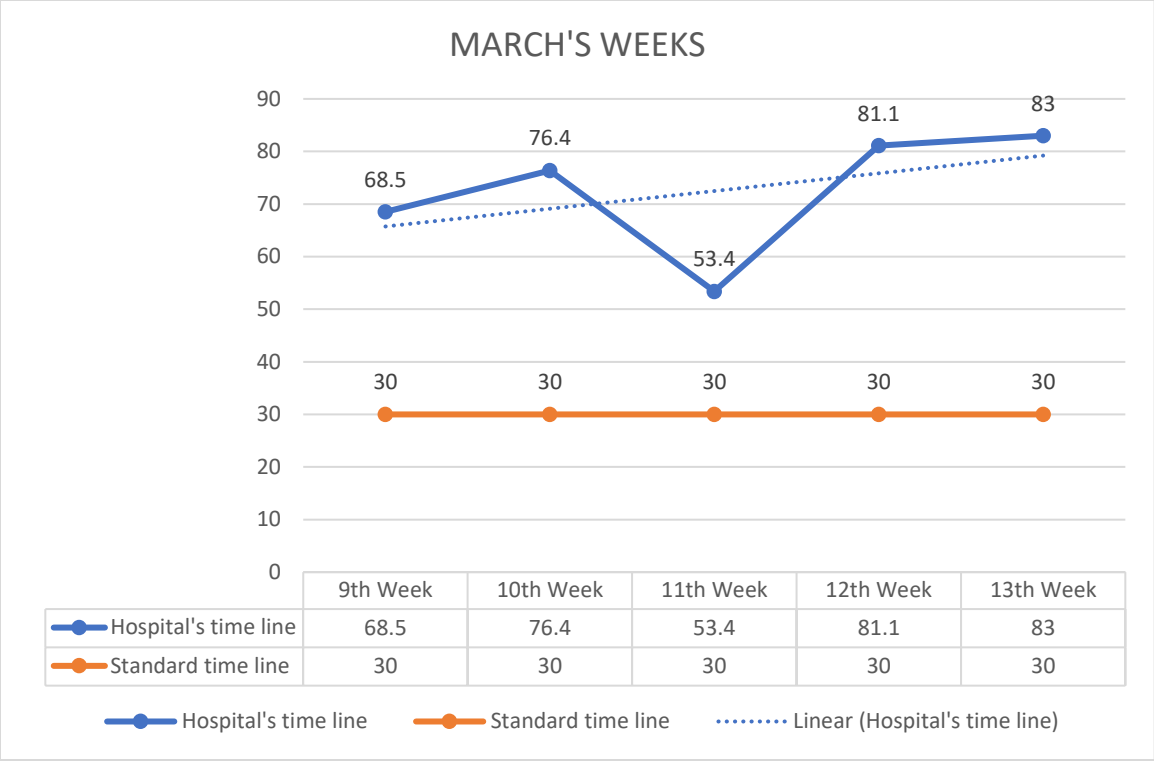

FIGURE 4.4

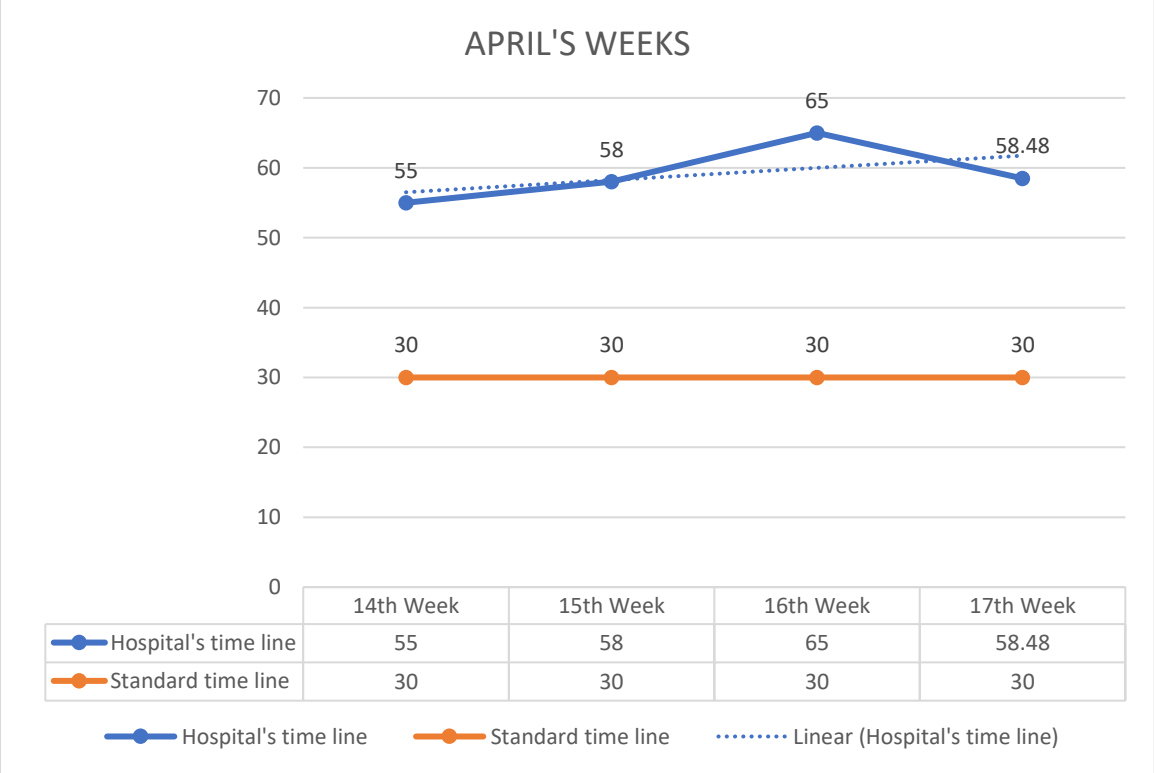

FIGURE 4.5

✓ Section III: TOTAL NUMBER OF TOTAL CONSULTATION:

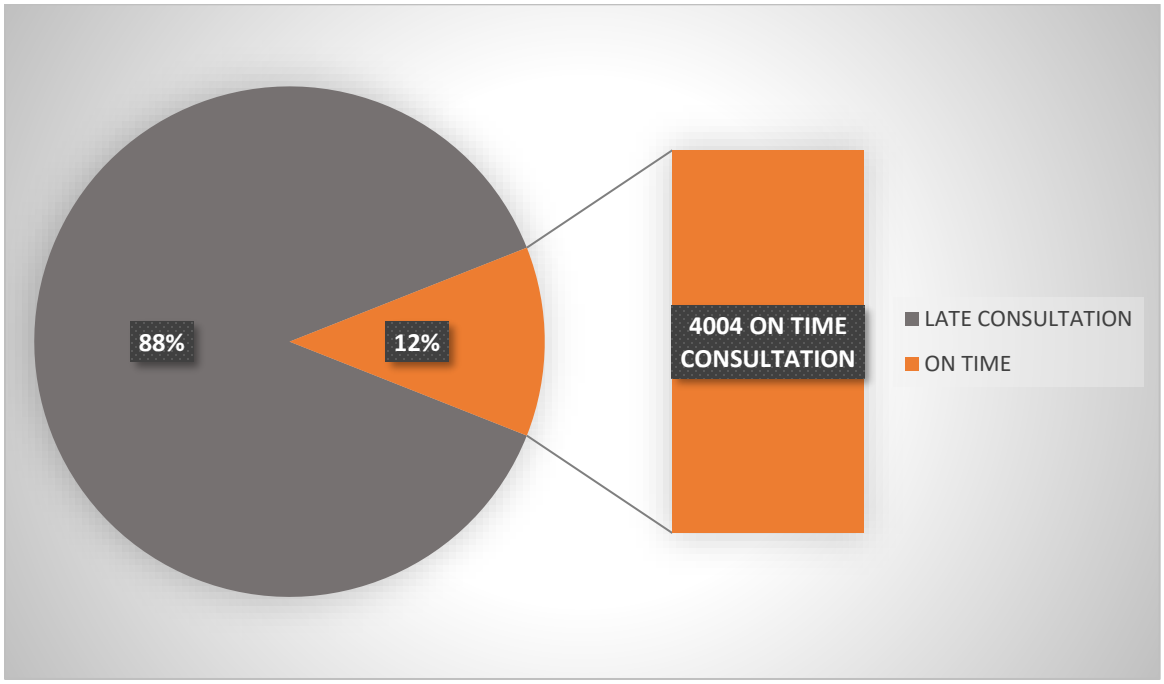

FIGURE 4.6

✓ Section IV: LOCATION OF DELAY FOR CONSULTATION:

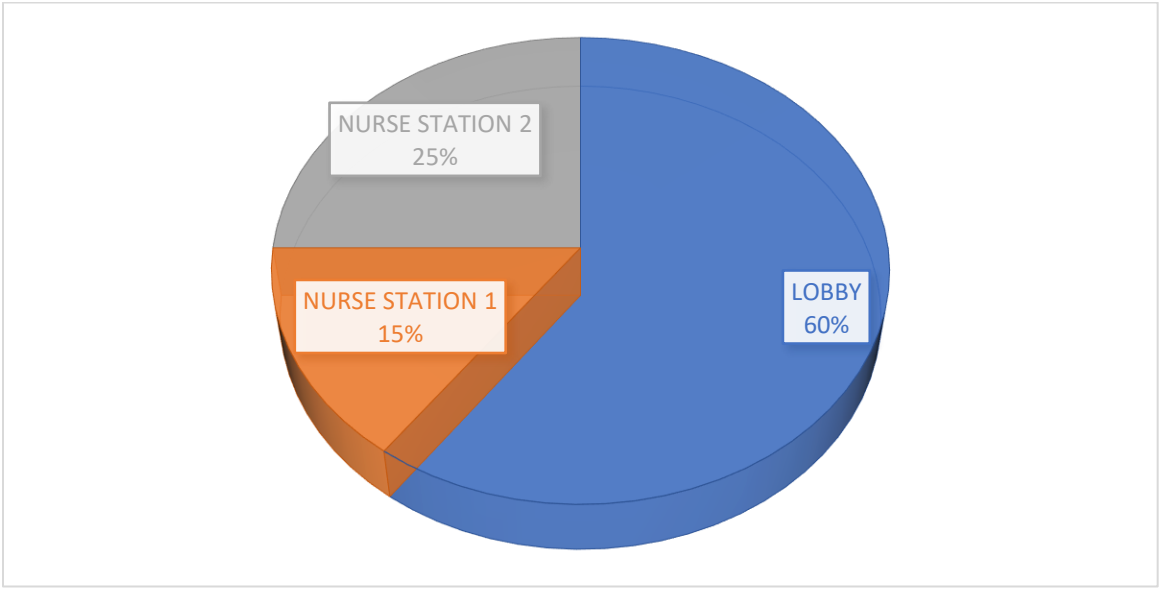

FIGURE 4.7

✓ Section V: FLOW OF CONSULTATION THROUGH OUT THE DAY:

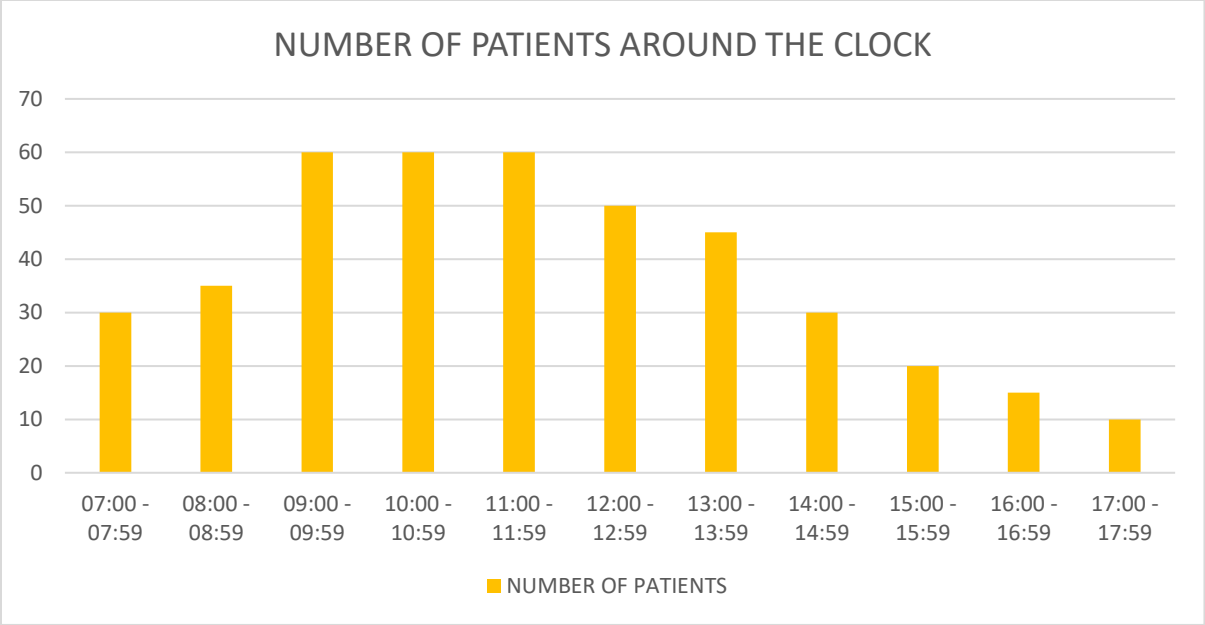

FIGURE 4.8

✓ Section VI: NUMBER OF NEW REGISTRATION:

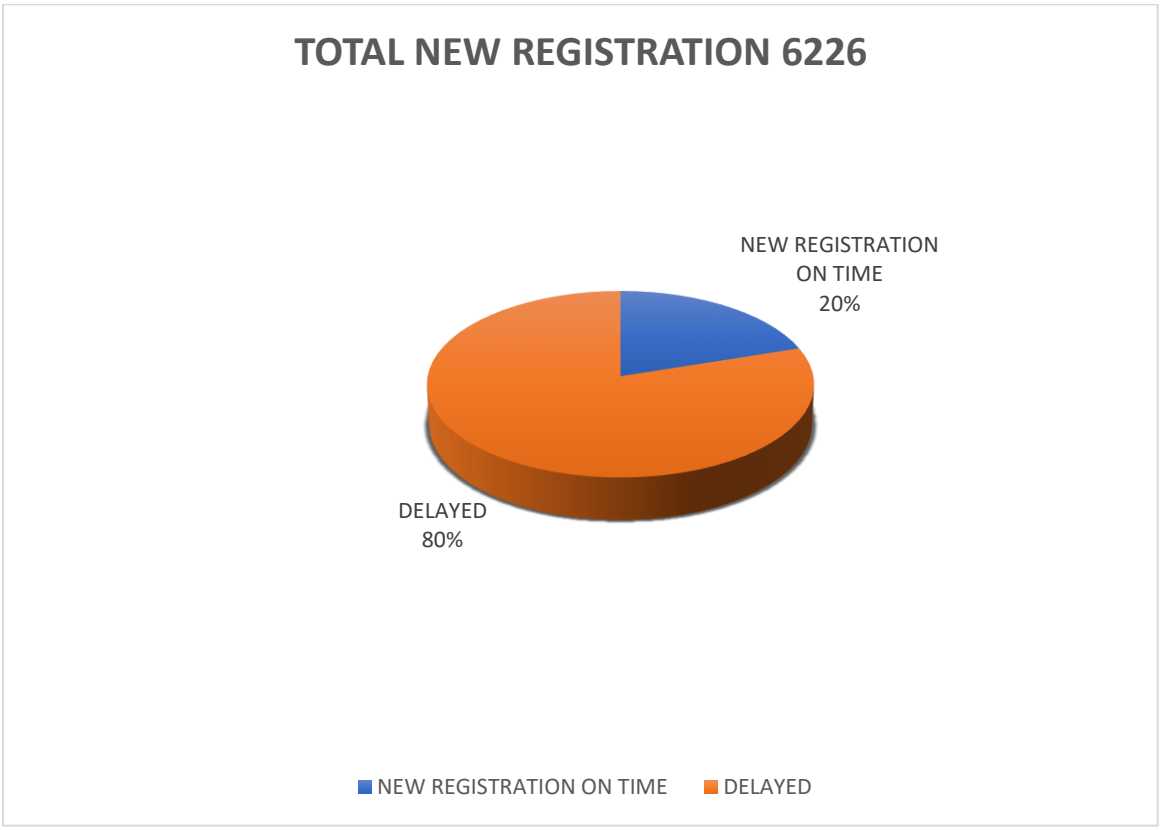

FIGURE 4.9

✓ Section VII: DELAY HAPPENS FOR THE DOUBLE BILLING FOR INVESTIGATION:

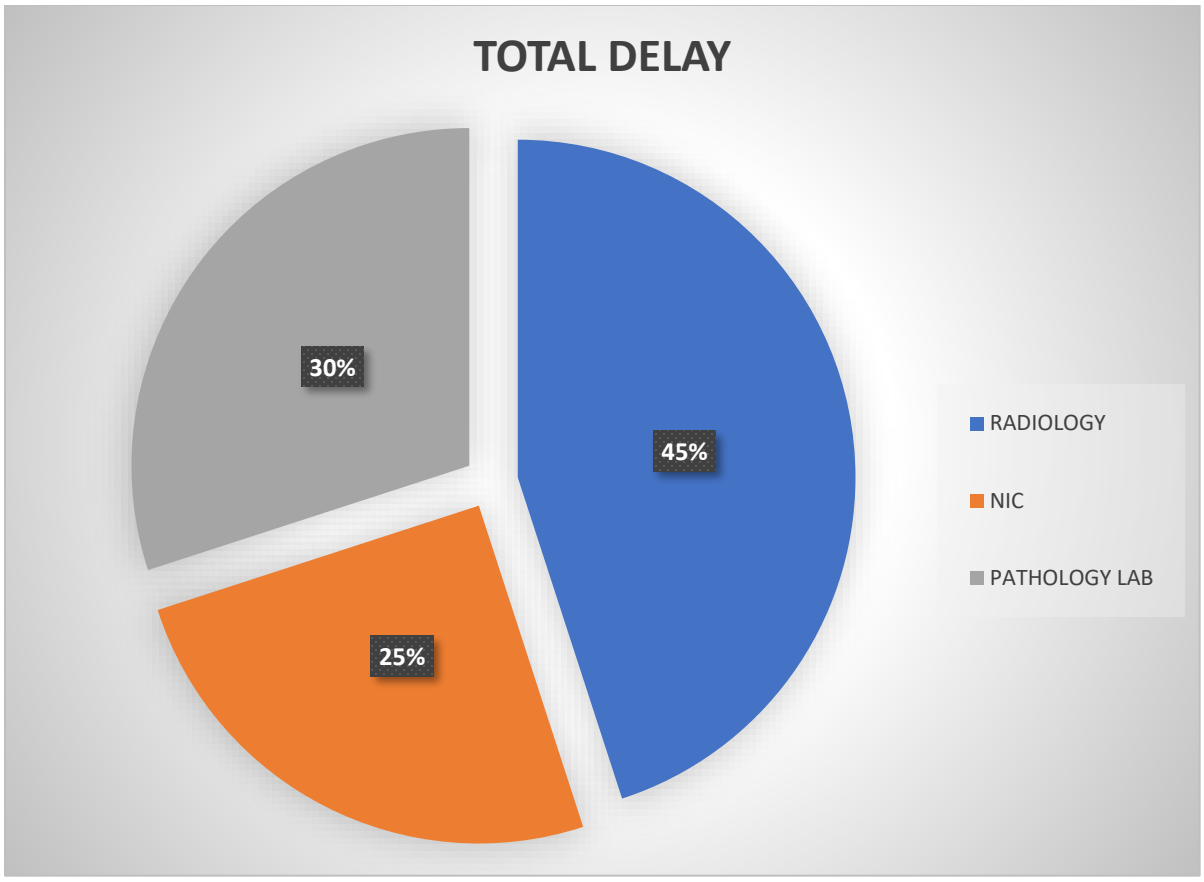

FIGURE 4.10

Most double billing delays occur in radiology due to price revised recently. And the billing staff are not well aware of the revised price

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VI DISCUSSIONS & RECOMMENDATIONS

- DISCUSSION: - The present discussion is on the study of, "PROJECT REPORT ONTIME MOTION STUDY ON OUTPATIENT SERVICES & DETECTING THE FACTORS CONTRIBUTING TO THE DELAY IN THE CONSULTATION PROCESS."

- The results indicate that the maximum numbers of delays are happening as the HIS used by the hospital is outdated and not work friendly.
- For that billing take too much of the time for the total consultation process.
- Multiple numbers of patients are coming at the same time for consultation. With that many walk-in patients come without any appointment. For which waiting time also increases.
- The study is strongly correlated between the billing and HIS.
- The OPD rush hour start from 09:00 am to 12:00 pm according to FIGURE 4.6.
- Due to poor awareness of patients, they didn't know the procedure for doctor consultation.
- IT issues take quite a long time to resolve.
- The data suggests that there is no facility of photocopy, and the printers of the Lobby don't work properly.
- Poor que management in the lobby area.
- No separate line for report collection.
- No separate line for senior citizen.
- No separate billing for ECHS patients, as there is a process for generating claim id before doing the billing.

RECOMMENDATION: -

My recommendations according to my above findings is as followed,

1. The billing software i.e., the HIS needed to be change as it is not at all work friendly.
2. The hospital needs to introduce the original Hospitals software i.e., "TRACKCARE" for better integration.
3. Need to implement affective and efficient que management system.
4. Introduce streamline billing standards.
5. Provide appointment according to the doctor's availability.
6. Minimize the tradition of walk-in patients.
7. Communication gap between the inner department need to be reduce.
8. Focus to minimize the factors related to delay.
9. Separate the counters according to the patient needs.
10. Establish SOPs for the consultation process.
11. Staff are to be trained to maintain those SOPs.
12. IT teams should be available at once and do their work effectively and completely as the system crashed occurs frequently.
13. Staffs need to be more punctual with their job obligations.
14. Should always priorities the patients feedback effectively.
15. Should totally separate the report counter.
16. Printers should always be in optimum condition.
17. Patients should be providing enough information for the process.

By following these recommendations, the project report on project on timed motion study on OPD and detecting the factors contributing the delay in consultation process can help the hospital to achieve its goal of improving patients feedbacks, reducing operation cost, increase efficiency, and enhancing patient satisfaction.

VII CONCLUSION

The main reason being the delayed service I can observe is the hospital information system used by the hospital, it is laggy, it is outdated, it is slow, it is much more complex, not user friendly, time consuming etc.
There are several strategies introduce here in this study to minimize the delay in outpatient service in Hospitals, including introduce work friendly HIS, improve que management, optimize operations of the OPD process, use latest technology to improve patient care and improve patient satisfaction
The Operations management department is essential for OPD service as it deals with the whole operation system of the OPD. And should bear its responsibility to smooth line the process.
The first strategy identified was to introduce work-friendly software like- TRACKCARE, this improves the functionality of the billing process, integrates the whole system, fast operational activity.
The second strategy was to improve que management, as there is no separate counter for report, senior citizen, and ECHS patient, so there is a need of proper and effective que management to distribute the workload according to the need and smooth the process and increase the efficiency of the staff.
The third strategy was to introduce que management, as there is too much of a rush of the patient in OPD a proper que management is needed.
Therefore, I can say that this project report can help the hospital to know its areas of deficiencies as my project report states the truth withou
t any biasness.