A STUDY ON QUALITY OF SERVICES AT EMERGENCY DEPARTMENT OF NIVIK NEURO TRAUMA & MULTISPECIALITY HOSPITAL, JAIPUR

Dissertation submitted to

The IIHMR University, Jaipur

For the partial fulfillment for the award of the degree of MBA Hospital and Health Management

By

By

Varsha Sharma

Roll no- 1440

Under the supervision and guidance of

Dr. P.R. Sodani

President

Ayushmi
Healthcare Consultancy
Dedicated to quality

Date: 25/06/2024

CERTIFICATE

This is to certified that **DR.VARSHA SHARMA** has carried out the work on his dissertation titled, **"A STUDY ON QUALITY OF SERVICES AT EMERGENCY DEPARTMENT"** under my guidance and supervision at **NIVIK NEURO,TRAUMA AND MULTISPECAILITY HOSPITAL (A 100 BEDDED HOSPITAL), MANSAROVAR, JAIPUR** during the period of **17th March to 18th June 2024**.

Her approach to the subject has been consistently sincere, scientific and analytic. She has comply with all the standard relevant to emergency department laid down by NABH 5th edition standard.

I wish a good luck for her bright future.

Dr. Shiva Agrawal
BDS (Mumbai), PGDHHM (IIHMR, Jaipur)
Hospital Quality (NABH) Consultant
Ayushmi Healthcare Consultncy
Contact:+91-9664473072
Email:drshivaagrawal@gmailcom

IIHMR UNIVERSITY

Appendix F: Certificate from Faculty Guide and School Dean

CERTIFICATE

This is to certify that dissertation titled "A STUDY ON QUALITY OF SERVICES AT EMERGENCY DEPARTMENT OF NIVIK NEURO TRAUMA & MULTISPECIALITY HOSPITAL, JAIPUR", is a record of the research work undertaken by Varsha Sharma, in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management)/~~MBA (Pharmaceutical Management)~~/~~MBA (Development Management~~) from the IIHMR University, Jaipur under my guidance and supervision and ~~his~~/her approach to the research study has been sincere, scientific, and analytical.

Faculty Guide
IIHMR University, Jaipur
Date 03/07/2024

School Dean
IIHMR University, Jaipur
Date 03/07/2024.

DECLARATION BY STUDENT

I hereby declare that this dissertation titled **"A STUDY ON QUALITY OF SERVICES AT EMERGENCY DEPARTMENT OF NIVIK NEURO TRAUMA & MULTISPECIALITY HOSPITAL, JAIPUR** is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

(Signature)
Date:

Abstract

Being the face of a hospital, the emergency department should ensure that the entire process of patient care is smooth without any reasons for delay. The Emergency Department in a Hospital is the first point of Contact for a Patient seeking acute care at a hospital. Emergency Department plays a crucial role in ensuring People's Health and saving lives in disasters and accidents. Considering the importance of Emergency Departments in Healthcare System and the high mortality rate of patients referred to these departments, it is crucial to provide Quality Services in Emergency Departments, with the aim to encourage healthcare Organization to join quality Journey

A two-month long study of the emergency department (ER) of NIVIK HOSPITAL Jaipur uncovered many problems in the process which led to unnecessary delay in transfer of patients to In-Patient Department (IPD) or Discharge. A time study was conducted to determine the time it took to complete every step of the patient care process, from his/her arrival to his/her departure from ER. At the end of the study, it was concluded that, unavailability of beds due to high occupancy rate in the hospital was the major reason behind the increased length of stay of patients in ER. Smoothening of the discharge process in order to maintain the TAT of 4 hours for cash patients and 6 hours for TPA patients was suggested to ensure that beds are available when needed. The study was a cross sectional one which included patients for immediate care, nursing staff, ER doctors and consultants. A number of other problems were identified and suitable suggestions have been made to enhance patient experience in ER.

Acknowledgement

It has taken twelve weeks to prepare this report with the guidance of many people. I want to thank each and every one of them. Throughout the process of authoring this report, I would like to thank **Dr. Sondev Bansal**, Director, NIVIK Hospital, for giving me this opportunity to undertake Dissertation programme in this esteemed organization.
I would like to thank my mentor, **Dr. Shiva Agarwal** for her guidance, support, and continuous supervision. Thank you for all your assistance and information, and especially to the staff of Nivik Hospital.

I would like to acknowledge **Dr. P.R. Sodani,** President of IIHMR University for instilling in me a positive attitude towards learning, helping, and for his unwavering support whenever needed. Lastly it would be incomplete without acknowledging the support and assistance of my colleagues

Table of Contents

Topic **Page no.**

List of Figures

Chapter 1: Introduction/Background

Aim: To analyze the Quality parameters in emergency department of NIVIK Hospital, Jaipur.

Objective:

The objectives of the study are:

(i) To understand the process flow of the Emergency department
(ii) To calculate the Length of Stay (LOS) and the initial assessment time of patients in ER.
(iii) To calculate the time in which consultant responds to calls from ER.
(iv) To identify the reasons for delay in shifting the patient.
(v) To suggest the measures to improve the process cycle of ER.

An overview of the emergency department

The Department of Emergency at NIVIK Hospital provides round the clock emergency services to patients arriving at the facility without prior appointment; either by their own means or by an ambulance.

The department is easily accessible to patients owing to its strategic location on the ground floor closer to the main entry of the hospital.

The Emergency department or the ER here has a total of four beds color coded according to the severity of the patient's condition.

- One Bed- Yellow
- One Bed- Red
- One Bed- Green
- One Bed- Black

Location: Ground floor

Total equipment in ER

1. Patient Bed: 4
2. Patient stretcher: 2
3. Patient monitor: 4
4. Defibrillator: 1
5. Oxygen Cylinder trolley: 1
6. Oxygen cylinder: 4 (2 ER+ 1 ambulance+ 1 portables in ambulance)
7. Nebulization machine: 1
8. Syringe pump: 2
9. Weighing machine: 1
10. Portable IV stand: 1

11. ECG machine: 1
12. Stethoscope: 2
13. BP instrument manual: 1
14. Kidney tray steel: 1
15. Crash cart: 1
16. Cervical collar adult: 3
17. Glucometer: 1
18. Ambu bag: 1
19. Bain circuit: 1
20. Laryngoscope: 2
21. Wheelchairs: 2
22. Cardiac table-3

Total Files in Emergency

1. Ambulance cleaning checklist files
2. Ambulance patient monitoring form file
3. ER initial assessment form
4. MLC Form And File
5. ER primary consent file
6. ER handover and takeover forms
7. HIV consent forms file
8. CT consent file
9. Nursing handover file
10. Ambulance inventory checklist
11. Crash cart checklist file
12. ER refrigerator temperature checklist file
13. Hygrometer checklist file
14. Housekeeping department cleaning checklist file
15. Oxygen cylinders checklist file
16. Ambulance's oxygen cylinder checklist file

Total registers in emergency

1. CSSD Register
2. Daily Inventory register
3. Death register
4. Oxygen cylinders register
5. Bio-medical equipment complaint register
6. ER Lab register
7. Trop-T register
8. ER critical value register
9. Master register
10. ER Transfer out register

ER Process flow

11. Patient comes to the ER department either by himself or by ambulance.
12. The GDA and the nursing staff go outside to receive the patient and take him/her in, shifting him/her on the appropriate bed.
13. Primary assessment is done by the nursing staff (vitals are taken and nursing triage assessment form is filled).
14. ER doctor does the assessment and the patient is immediately given treatment as per his/her need.
15. Assessment done by the ER team, which includes nurses and doctors, together constitutes the initial assessment.
16. Non-emergency patients who come to the ER and require consultation only are referred to the OPD.
17. Emergency patients are then registered as per the registration process and investigations are ordered, if necessary, and the patient is kept under observation.
18. For registration, the patient or his/her attendant has to go to the central reception.
19. Based on the assessment, doctor decides as to which diagnostic tests are to be conducted for screening.

20. Based on the results of the investigations, ER doctor decides whether referrals are needed to be made to specialties for further course of treatment or the patient can be discharged/ transferred out.
21. The ER doctor, as per his provisional diagnosis, informs the concerned consultant chosen by the patient. If the patient does not come with a choice of consultant, then the ER doctor informs the concerned consultant according to his/her own judgment of the patient's condition.
22. Patient coming to ER with a specific doctor's name shall be admitted under that doctor irrespective of his presenting complaint.
23. Patient with an apparent cardiac problem, after evaluation, shall be directly admitted under Cardiologist.
24. Walk-in patient without having any reference of a particular consultant or with a non-cardiac complaint shall be examined by the ER resident, who will first consult the physician of the day and accordingly will admit the patient.
25. The doctor after examining the patient either advises Admission or Discharge.
26. If the patient agrees for admission, then admission is given if bed is available but if bed is not available then patient is made to wait in ER.
27. The admission form is filled and the required information is forwarded to the central reception. The reception personnel shall complete the admission process on priority basis and the patient shall be transported from the ER to the assigned bed.
28. Patient privacy and confidentiality has to be respected at all times.
29. A patient can be kept under observation in ER for not more than four hours within which a decision has to be taken for admission or discharge based on the patient's condition.
30. If the patient disagrees for admission, then he/she, after being given primary treatment, is asked to fill the LAMA (Leave against Medical Advice) form and the patient goes away.

General observations:

- The staff of ER is responsive and polite in dealing with the patients and is always ready to serve the patients.
- Efforts were constantly made to improve the process with a dedicated ER coordinator to get the patients shifted out of ER (either IPD or Discharge) within the stipulated time.
- Regular audits are conducted by quality department to maintain the standards of services being provided by the ER department.
- The length of stay of many patients is more than the benchmark of 4 hours due to unavailability of beds.
- Files are not maintained properly and registers are having incomplete information.
- Shortage of waiting area outside the department.

- Signage were proper outside the hospital.
- Insufficient number of guards during a single shift to cater to the flow of patients and their attendants.
- Communication gaps both inter-departmental and intra-departmental.
- No separate admission & billing counter in ER even though there is space for it. The attendant has to go to the central reception for admission and billing increasing chaos and time taken for patient treatment.
- More than often GDAs are not available when needed.
- ER doctors are hesitant in filling lengthy triage forms.
- No fall risk signage used or used very rarely.
- Floor managers are mostly unaware about the status of availability of beds. The ER coordinator has to directly call the authorized person in the patient destination to find out if bed is available.
- Even OPD patients come to ER as consultant sends them to start the necessary tests to be done before a surgery.
- Many times, it is observed that the nursing staff doesn't receive the patients and only GDAs are sent.
- Training should be rigorous to improve the soft skills of the ER staff. It is also observed that they do not listen to patients who constantly ask for something.
- Female nursing staff seen with long nails.
- No single person authorized to receive phone calls. This leads to confusion and miscommunication.
- Beds are not available due to high occupancy and slow discharges.
- Some consultants come very late to see the patient.

Quality indicators for ER

1. **Time for initial assessment of emergency patients**

- **Definition:** Initial assessment is the evaluation of the health status of a patient by performing a physical examination after taking a health history. The time shall begin from the time the patient has arrived till the time that the initial assessment has been completed.
- **Benchmark:** 15 min

2. **Percentage of return to ER within 72 hrs.**

- **Definition:** Any patient who has returned to emergency within 72 hrs. From his first visit to ER for similar complaints is considered as return to ER.
- **Benchmark:** 0.64%

3. **Length of stay in emergency**

- **Definition:** Duration for which a patient stays in ER during a particular time period.
- **Benchmark:** 4hrs

Chapter 2: Review of Literature

Title	Author	Objectives	Key findings
1.Emergency Medicine Specialists' Knowledge of Hospital Emergency Department Indicators and Their Role in Patient Treatment/17th April 2023	Gholamreza Masoumi Mahdi Rezai sayyed kasra fatemi	The study evaluated emergency medicine professionals, knowledge of hospital emergency indicators and their role in improving patients. The result can be used for health policy makers in the files of information, education, integrated and knowledge based management, and evidence based need based policy making.	The study identified 14 subcategories and four main categories related to emergency services, including providing services to patients, improving emergency efficiency and performance, accreditation, and proposed indicators , National emergency indicators were found to play a crucial role in improving the quality of healthcare by prioritizing patients based on urgency, reducing waiting times, and facilitating timely transfers to specialized wards. Familiarity with emergency department indicators was highlighted as essential for enhancing teamwork, efficiency, and patient satisfaction in emergency settings. The study emphasized the importance of management and planning in line with accreditation criteria to enhance emergency department performance and service quality. The study suggested that increasing awareness among emergency medicine specialists about national indicators could

			lead to faster patient assessments, reduced emergency department stays, improved patient satisfaction, and enhanced overall emergency unit performance
2.Emergency department overcrowding: causes and solutions/Dec 2023	Ahmet Butun Ahmet Butun	To investigate the causes of ED use to provide solutions for alleviating ED overcrowding in Turkey. To analyze patient behaviors and perceptions leading to ED visits, including preferences for quick care and 24/7 availability. To develop strategies for reducing non-urgent ED visits and improving outpatient clinic services to alleviate ED overcrowding. These findings and objectives provide valuable insights into understanding and addressing the challenges of Emergency Department overcrowding.	Key Findings- The study aimed to identify the causes of ED overcrowding, Participants commonly visited the ED due to perceived urgency, 24-hour availability, and faster care compared to outpatient clinics. Reasons for ED visits also included difficulty in making timely appointments at outpatient clinics and clinic closures. Recommendations for reducing ED visits included increasing the number of qualified staff in the ED.

3.Emergency department, quality dashboard, a systematic review of performance indicators, functionalities and challenges	Sohrab Almasi,Hmmid moghaddasi	Identify key performance indicators and functionalities of quality dashboards in the Emergency Department. Analyse challenges associated with the implementation of quality dashboards in the Emergency Department. Key Findings:	The study identified key performance indicators in five groups: quality of care, patient flow, timeliness, costs, and resources. Functionalities: Quality dashboard functionalities included reporting, customization, real-time information display, resource management, and alerts. Challenges: Challenges in implementing quality dashboards included data sources and quality, integration with other systems, adaptability to user needs, and selection of appropriate performance indicators Impact: Utilizing key performance indicators and quality dashboard functionalities can enhance utilization management and quality of care in the Emergency Department . Recommendations: Future developments should focus on data sources, data quality, integration with other systems, and customization to improve the effectiveness of Emergency Department quality dashboards. These findings highlight the importance of quality dashboards in providing timely information for effective control and management of Emergency Department processes, ultimately leading to improved patient care and operational efficiency.

4.The correction between service factors and the quality of service among emergency department nurses	Chanif Chanif,Nursalam Nursalama ,Sriyono Sriyonoa,Athik Dina ,Nashikhab Satriya Pranatab, Yunie Armiyatib	To investigate the correlation between service factors, specifically the assurance of emergency department services by nurses, and various dimensions of service quality within the emergency department setting. To identify areas for improvement in emergency care delivery by elucidating the relationship between service assurance and key quality indicators such as response times, safety incidents, procedural outcomes, and life-saving interventions.	The study revealed a significant correlation between the guarantee of emergency department services provided by nurses and key quality indicators, including emergency response time of less than 5 minutes, patient safety incidents, insertion of an IV cath line more than once, and life-saving interventions. Nurses' consistent and effective implementation of "3S" (safe self, safe patient, safe environment) practices was highlighted as crucial for achieving optimal results in saving emergency patients. The research emphasized the importance of timely response in handling emergency cases, with a good response time defined as less than or equal to 5 minutes, to prevent worsening of patients' conditions. Recommendations were made for nurses to enhance their knowledge and skills through continuous training to maximize the quality of treatment provided in emergency departments. Future research directions were suggested to expand the scope of variables, including patient satisfaction and resource utilization, to further understand the impact of service guarantees on emergency care outcomes.

Chapter 3: Methodology

Duration of the study: 17th March to 18th June 2024

Key Research Questions:

1) What is the average time taken to shift a patient from the emergency department to IPD/Discharge at NIVIK hospital, Jaipur?
2) What is the average time taken within which the initial assessment of a patient is completed?
3) How much average time do consultants take to examine patients after receiving a call from ER
4) What are the possible reasons for delays, if any?

Study Setting- Emergency department of NIVIK HOSPITAL was the setting for the study conducted for 3 months from **17th March 2024** to **18th June 2024**.

The participants of the study were-

- Patients
- Nursing staff
- ER doctors
- Consultants

Sample Size: 430 Patients

Study type: An Observational Study

Methods of Data Collection is primary and secondary sources of information.

The primary information was obtained through tool kit and interviews (Observation)

The Secondary information was collected from

- Patient Files & ER Registers
- MRD

- Conversation with the ER department staff
- Conversation with the patients

Inclusion or Exclusion Criteria:

- Only the patients coming between 9:00 a.m. till 3:00 p.m. were considered for the study. Patients coming before and after the given time were not considered as part of the study.
- Both Emergency as well as emergency patients in Day Care were included as part of the study.
- Patients in day care waiting for beds were not included.
- Patients for minor procedures like catheter removal, drip or injection were not a part of the study.
- Patients found dead on arrival were not included.

STUDY TOOL: The Master register of emergency department and checklists was used to monitor patient time for three months which was then analyzed at the end of the said period to find out the LOS, initial assessment time and the reasons for the delay in both.

Data Collection Method: Direct observation for understanding the routine activities of the department and flow of the patients and information. It will be totally a personal observation.

Data Analysis:

Data will be collected using a raw data sheet which including length of stay of patients, initial assessment time of patients; time gap between informing the consultant and his arrival will be calculated.

For documentation and dissemination of the data, charts and graphs will be used for the better understanding and clarity.

Operational definitions:

Length of Stay: Duration for which a patient stays in ER during a particular time period.

Initial assessment: Initial assessment is the evaluation of the health status of a patient by performing a physical examination after taking a health history. The time shall begin from the time the patient has arrived till the time that the initial assessment has been completed.

Time of arrival (t1): Time when the patient enters the ER for immediate care.

Time of report (t2): Time when the patient is shifted out of the ER either as an IPD patient for further course of treatment or is discharged after primary treatment.

Length of stay: t2-t1

Hypothesis:

The hypothesis for the study is that the quality of services in the emergency department of Nivik Neuro Trauma & Multispecialty Hospital, Jaipur is influenced by various factors such as the timely assessment by ER doctors, and efficient inter-departmental communication. It is anticipated that improving these factors will reduce the length of stay for patients in the ER and enhance overall patient satisfaction.

Ethical Considerations:

Confidentiality: Patient privacy and confidentiality were upheld throughout the study.

Non-Maleficence: Observations and data collection were conducted in a manner that did not disrupt the normal functioning of the ER.

Right to Withdraw: Participants were informed that they could withdraw from the study at any time without any negative consequences.

These ethical guidelines were followed to ensure the integrity of the research and the protection of who all involved.

Chapter 4: Results and Discussion

Discussion:

Of total 430 patients, 72% did not stay for more than 4 hours in ER while the stay was delayed for 28% of them. The major reason for delay is non-availability of beds in IPD.

Some doctors took a long time to visit the patient in ER due to other preoccupations.

The initial assessment time for ER doctors in some cases was found to be more than 15 minutes. This can be because the doctor was busy with a more serious patient in ICU and less manpower.

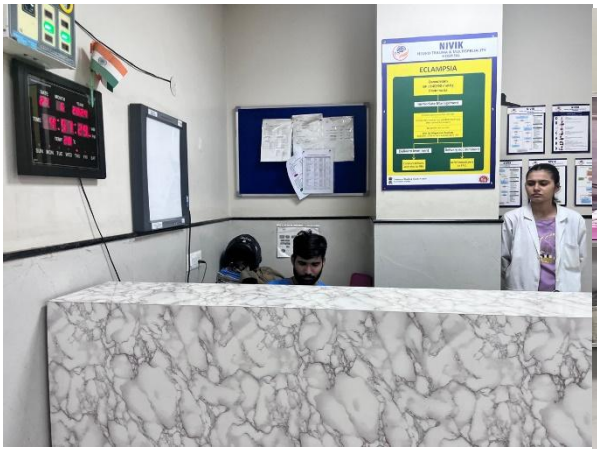
Other reason for delay were:

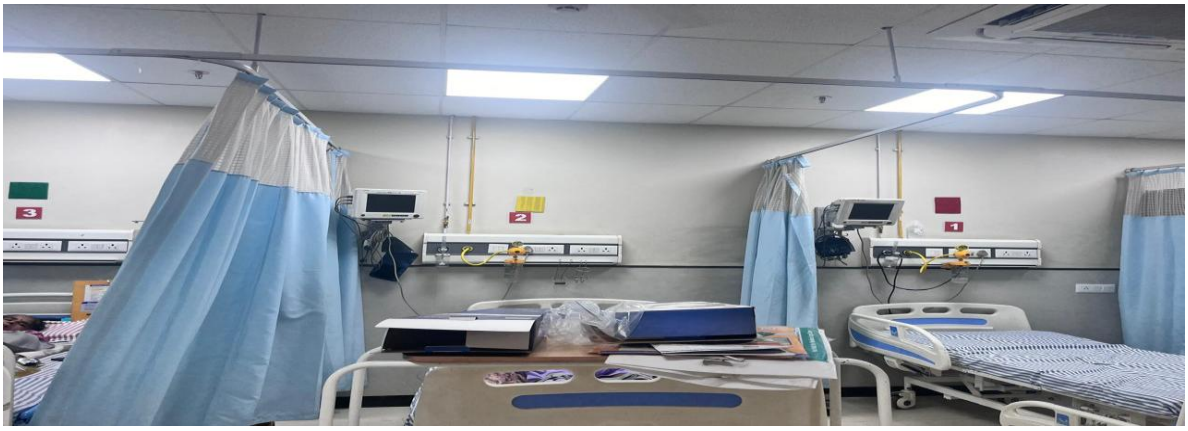
- ✓ Shortage of waiting area outside the department creates chaos inside ER as attendants tend to barge in.
- ✓ Insufficient number of guards during a single shift to cater to the flow of patients and their attendants.
- ✓ Shortage of ER doctors.
- ✓ Communication gaps inter-departmental and intra-departmental.
- ✓ No separate admission & billing counter in ER even though there is space for it. The attendant has to go to the central reception for admission and billing increasing chaos and time taken for patient treatment.
- ✓ More than often GDAs are not available when needed.
- ✓ ER doctors are hesitant in filling lengthy triage forms.
- ✓ No fall risk signage used or used very rarely.
- ✓ Floor coordinators are mostly unaware about the status of availability of beds. The ER coordinator has to directly call the authorized person in the patient destination to find out if bed is available.
- ✓ Even OPD patients come to ER as consultant sends them to start the necessary tests to be done before a surgery. The reason again is unavailability of beds. This creates shortage of beds in ER for actual patients.
- ✓ Many times, it is observed that the nursing staff doesn't receive the patients and only GDAs are sent who are unaware of the medical needs of a patient.
- ✓ Patients come to ER and get treatment but after getting financial counselling they refuse to get admitted. Financial constraint is a major reason behind patients taking LAMA.
- ✓ Waiting for diagnostic test results delays the decision-making process of ER doctors.

- ✓ Too many files and registers have to be maintained. A number of forms have to be filled.
- ✓ Due to unavailability of proper waiting area for attendants, they have to find a place to sit somewhere else but when they are needed for shifting the patient, it is difficult to find them.

List of signage's in Emergency department-

SIGNAGE	DISPLAYED (YES/NO/NA)	BILINGUAL (YES/NO/NA)
Services available in the Emergency department (prominent board near theentry of the emergency entrance)	Yes	Yes
Mission & Vision	Yes	Yes
Quality Policy	yes	yes
Patients' Rights and Responsibilities	Yes	Yes
Triage	Yes	Yes
Fire Exit Plan	Yes	Yes
Ambulance Parking Area	Yes	Yes
Drinking Water/ Washrooms	Yes	Yes
Health Education related Signage's (Maternal health, HIV, Prevention of infections Immunization programmer, Etc.)	No	No





Pictures of beds/equipment's/sinages of emergency department

RESULT:

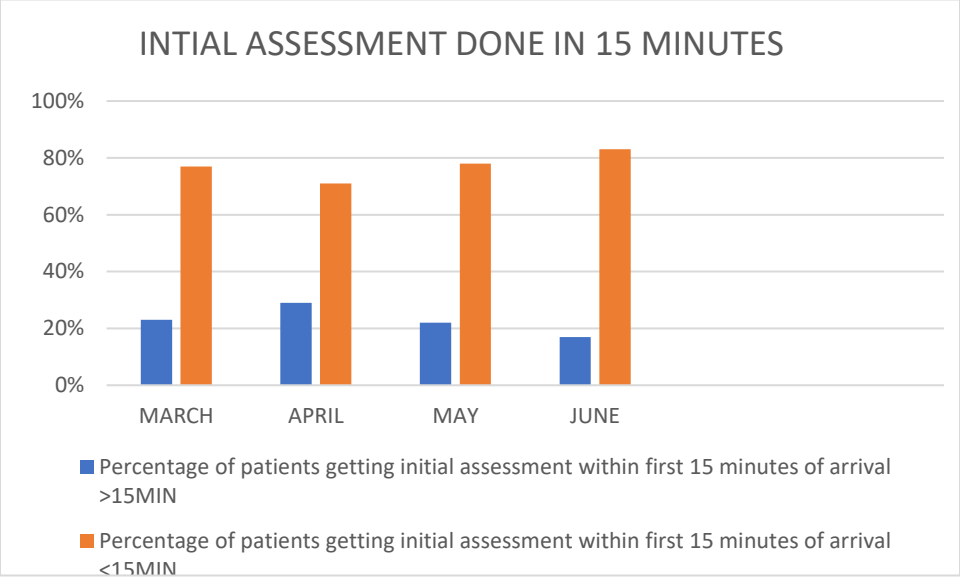


Fig 4.1: Percentage of patients getting initial assessment within first 15 minutes of arrival

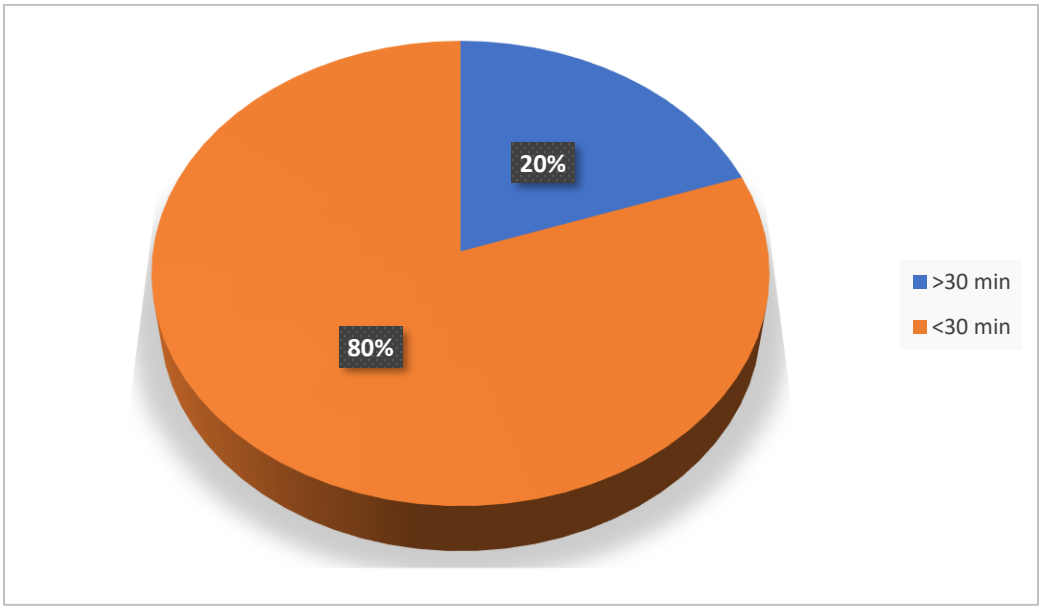


Fig 4.2: Percentage of patients who got examined by consultant 30 minutes after being called by ER doctor

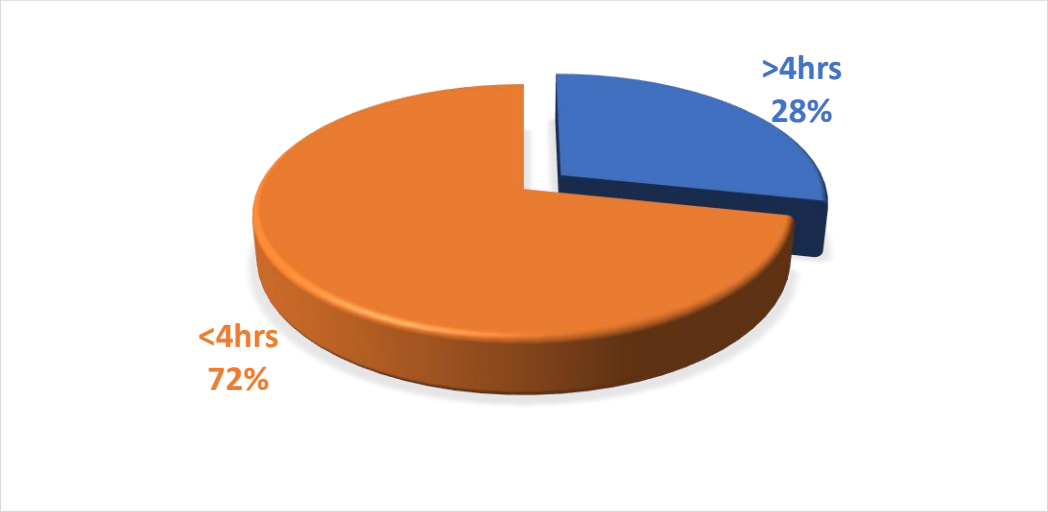


Fig 4.3: Percentage of patients staying for more than 4 hours & less than 4 hours in ER

Chapter 5: Recommendations

- Training should be rigorous to improve the soft skills of the ER staff. It is observed that they do not listen to patients who constantly ask for something.
- All female staff should not be allowed to grow their nails to maintain hygiene during patient care.
- Only one person should be authorized to receive calls at the first instance to avoid miscommunication.
- The availability of beds is heavily dependent upon the smoothening of the discharge process. Turnaround Time of 4 hours for cash patients and 6 hours for TPA patients should be maintained.
- Manpower should be increased according to the footfall of patients.
- Regular audits at least once a month to check for delays and identify areas that need improvement.

- ER patients should be given priority in imaging services.
- GDAs do not come on time and leave early. Signatures should be made compulsory and should be allowed to sign only when the next GDAs arrive.
- A separate admissions & billing counter should be made inside the ER.
- A guide or guard should stand outside to guide the cars coming with emergency patients.
- Other vehicles should not be allowed to use the path leading to ER.
- One oxygen cylinder should be present outside.
- One small oxygen cylinder should be there on one wheelchair too.
- Nursing & doctor triage form should always be present on every cardiac table so that they don't look for it when the patient arrives.
- Waiting area should be there for attendants so that they do not go far away to find a place and can be easily called when needed.
- Financial counselling should be done while the patient is being given primary treatment. Validity of TPA card or Bhamashah card should be clarified in the beginning itself.
- Training of doctors and staff should be done about the form, formats and registers present in emergency so that they can keep documents up to date.

REFERENCES

(i) https://www.healthcatalyst.com/insights/emergency-department-quality-improvement-transforming-delivery-care
(ii) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9885566/
(iii) https://www.researchgate.net/publication/330813797_Quality_indicators_to_measure_the_effect_of_opioid_stewardship_interventions_in_hospital_and_emergency_department_settings