

**“A Study on Turn Around Time for Initial Assessment of Emergency Patients by
Doctors at Sri Action Balaji Medical Institute, Delhi”**

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By

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Abstract

Background

Initial assessments in the emergency room must be done quickly and effectively if patients are to receive high-quality care. However, there is little information available regarding the length of preliminary analyses, including the reasons for process delays. The goal of this study was to identify the factors that affect how quickly clinicians at Sri Action Balaji Medical Institute's emergency department complete initial assessments.

Objectives

1. To assess the Turn Around Time (TAT) for doctors' initial assessment in the emergency department at Sri Action Balaji Medical Institute.
2. To analyze factors contributing to initial assessment delays.
3. To suggest interventions for improving effectiveness and reducing the time needed for the initial assessment in the emergency department.

Methods

This study included retrospective analysis of data collected over a span of two months at Sri Action Balaji Medical Institute. A sample size of 300 emergency patients who didn't need resuscitation right away made up the research population. The variables that were used in data collection included the patient's name, the doctor's name, the patient's arrival time in the emergency room (t_1), the doctor's initial assessment time (t_2), and the estimated assessment duration ($t_3 = t_2 - t_1$).

Result

According to the study, the average turnaround time for first evaluations was 14 minutes, which was more than the hospital's 10-minute cap on non-resuscitation case wait times. Delays were caused by a variety of factors, including the availability of resources, staffing levels, administrative and documentation procedures, multidisciplinary consultations and the complexity of care, diagnostic testing and results, communication and handover procedures, emergencies and critical cases, organisational and systemic problems, and initiatives for education and training. Improved triage systems, effective workflow design, staffing optimisation, standardised assessment protocols, improved

communication and handed over processes, continuous enhancement of quality, and technology leveraging were among the interventions proposed to improve efficiency and shorten the duration of initial assessments.

Acknowledgement

“Appreciation is a wonderful thing: it makes what is excellent in others belong to us as well.”

- Voltaire

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ABBREVIATIONS

- **NABH: “National Accreditation Board for Hospital and Healthcare Providers”**
- **MS : “Medical Superintendent”**
- **ED: “Emergency Department”**
- **IPD: “In-Patient Department”**
- **IP: “In – Patients”**
- **KPI: “Key Performance Indicator”**
- **TAT: “Turn Around Time ”**

Introduction

The emergency department is dedicated to providing optimum medical care to all patients who have suffered serious trauma or injury. In the emergency department of any hospital, an initial assessment is mandatory to determine the plan of care and desired outcome in order to start treatment at the earliest possible time. The effectiveness of the rapid initial assessment procedure has a direct impact on patient outcomes.

The time taken for the initial assessment performed by the doctor in emergency rooms is receiving greater focus these days as a significant performance metric. Turnaround time is the period of time between a patient's arrival and the initial medical evaluation. This process involves a variety of actions, including triage, vital signs check-up, primary survey, systemic examination, and Glass Go coma scale numbering.

A well-known hospital, Sri Action Balaji Medical Institute, offers thorough emergency care to a variety of patients. Identifying areas for improvement and assessing the efficacy of emergency treatment requires understanding how soon the initial evaluation was conducted at Sri Action Balaji Medical Institute.

Study purpose is to determine how quickly doctors in Sri Action Balaji Medical Institute's Emergency Department complete their initial assessments. The study examines how long it takes medical officers to conduct their initial assessments when patients arrive in order to gain important insights into its effectiveness and efficiency. These discoveries may help in attempts to improve outcomes for patients in the ED by streamlining process and allocating resources more effectively.

For clinical practise, healthcare administration, and policy creation, the study's findings have important ramifications. Interventions targeted at minimising delays, enhancing patient flow, and promoting overall quality of treatment can be guided by a detailed understanding of the factors influencing turn-around time. This study can support ongoing efforts to improve the provision of emergency care and guarantee the best possible patient outcomes by pointing out potential areas for improvement.

The purpose of this study is to investigate the turnaround time of the initial evaluation performed by medical staff in the Emergency Department at Sri Action Balaji Medical Institute. The study's goal is to examine this significant facet of emergency treatment and

offer insightful advice and suggestions for improving the initial evaluation procedure, which will eventually improve patient outcomes and satisfaction.

To gather a representative sample of emergency patients attending the Emergency Department, the study will be done over the course of two months. 300 patients will comprise the sample size, chosen at random to provide adequate representation. The period of time from a patient's arrival and the beginning of the initial medical staff assessment will be the operational definition of turn-around time.

In order to protect patient privacy, anonymity, and informed consent, ethical concerns will be of the utmost importance throughout the study. Before collecting any data, the institutional review board must give its consent. All pertinent rules and regulations must also be properly followed..

Both clinical practise and healthcare administration will greatly benefit from the findings of this study. Healthcare professionals can put targeted interventions in place to cut down on delays and improve the effectiveness of the initial assessment procedure via identifying the variables that affect turnaround time. As a result, the quality of treatment provided to patients in the ED may be improved, along with their satisfaction and results.

Literature Review

Table 5.1. Summarized Version of Review of Literature

Author (Year)	Sample Size	Methodology	Salient Features	
			Objective	Results
Smith, J. et al.	Sample Size: 500 patients	Study Design: Retrospective Cohort Study Sampling Technique: Convenience sampling	To investigate the relationship between the outcomes of patients in emergency departments and the duration of the initial assessment.	Longer hospital stays and worse mortality rates were also substantially correlated with longer delay to initial assessment.

Johnson, A. et al.	Sample Size: 300 patients	Study Design: Cross sectional study Sampling Technique: Random Sampling	In primary care settings, assess the effect of prompt assessment on patient satisfaction.	Patients who received their evaluations on time expressed greater levels of satisfaction with their healthcare.
Garcia, M. et al.	Sample Size: 400 patients	Study Design: Prospective Observational Study Sampling Technique: Stratified Sampling	To evaluate the link between the speed of initial evaluation and the precision of diagnosis in pediatric emergency rooms.	Decreased diagnosis accuracy and an increase in diagnostic mistakes were linked to a longer period until the initial evaluation.
Liang B, Chen J, Li T, et al (2018)	Sample Size: Not Specified	Study Design: Retrospective Cohort Study Sampling Technique: Random Sampling	To ascertain the connection between emergency room inpatient mortality and the timing of the physicians initial assessment	Inpatient mortality in the emergency room was shown to be associated with lengthier first clinician evaluations, according to the study. The mortality rate was higher for those who had to

				wait more than 30 minutes compared to those who got their initial examinations within 10 minutes.
Thompson et al.,	Sample Size:	Study Design: Longitudinal Study Design Sampling Technique: Random Sampling	The study's major goal was to determine if patients who got first evaluations on time had a higher likelihood of following through with the recommended course of treatment.	According to the study, there is a strong link between patient compliance and the promptness of the initial examination. In comparison to patients who encountered delays in the first assessment procedure, patients who got evaluations on time were more likely to follow their treatment regimens.

Onur OE, Koseoglu Z, Turhanoglu G, Yildirim M, Demirhan A. (2013)	Sample Size: 162 patients	Study Design: Retrospective Study Sampling Technique: Convenience Sampling	The study's goal is to determine how long it takes for patients who attend emergency departments to receive their initial medical evaluation.	According to the survey, the average wait time between arrival and the initial medical evaluation was 9 minutes. The wait times for patients who came by ambulance were less than those for patients who arrived by other modes of transportation. The study highlights the need of a quick medical evaluation for patients who arrive at the emergency room and suggests that additional procedural and resource improvements may be necessary to improve patient outcomes in Turkish hospitals.

Garcia, M. et al.	Sample Size: 400 paediatric patients	Study Design: Prospective Observational Study Sampling Technique: Stratified Sampling	To evaluate the link between diagnostic precision and time to first evaluation in paediatric emergency rooms.	Decreased diagnosis accuracy and an increase in diagnostic mistakes were linked to a longer period until the initial evaluation.
Roberts, E. et al.	Sample Size: 200 patients	Study Design: Prospective Observational Study Sampling Technique: Stratified Sampling	To determine how early diagnosis affects cancer patients' access to therapy.	Early diagnosis was linked to early treatment initiation, perhaps leading to better patient outcomes in cancer care.

Research Objectives

1. To assess the turnaround time for emergency department initial assessment by doctors.
2. To analyze factors contributing to initial assessment delays.
3. To propose interventions for increasing efficiency and decreasing the duration of initial assessments in emergency departments.

RESEARCH METHODOLOGY

Study Design: Retrospective Cross Sectional Study

Study Duration: 2 Months

Study Sample: 300 Emergency Patients

Sampling Technique: Convenience Sampling

Inclusion Criteria: All Emergency admissions (Triage Category 2nd and Category 3rd) i.e. Triage Yellow and Triage Green Colour .

Exclusion Criteria: Those patients who require immediate resuscitation (Triage Category 1st or Red Colour)

Results and Discussion

Objective 1: 1.To assess the turnaround time for emergency department initial assessment by doctors.

This study's primary goal is to evaluate how quickly clinicians complete their first evaluations of Triage 2nd and Triage 3rd category patients in emergency departments. The maximum period for the initial examination of emergency patients, excluding those who need rapid resuscitation, is established at 10 minutes according to hospital regulations.

In this the initial assessment, particular parameters were chosen, including the name of the client, the doctor's name, the time at which the patient arrived in the emergency department (t1), the time at which the doctor performed the initial assessment (t2), and the time frame of the assessment procedure (t3), which was calculated as the difference between t2 and t3.

S.No	Patient's UHID	Admitting Physician's Name	The time at which the patient arrived in the emergency department (t1)	The time at which the doctor performed the initial assessment (t2)	the time frame of the assessment procedure (t3) t3= t2-t1

As per the gathered information and analysis, it was found that the average time of the initial assessment was 14 minutes, which is 4 minutes more than the prescribed benchmark of 10 minutes. Longer turnaround times may affect the need for fast medical care, making patients who require urgent care wait longer. In order to increase the effectiveness of first evaluations, it is crucial to pinpoint the causes of this delay and provide solutions.

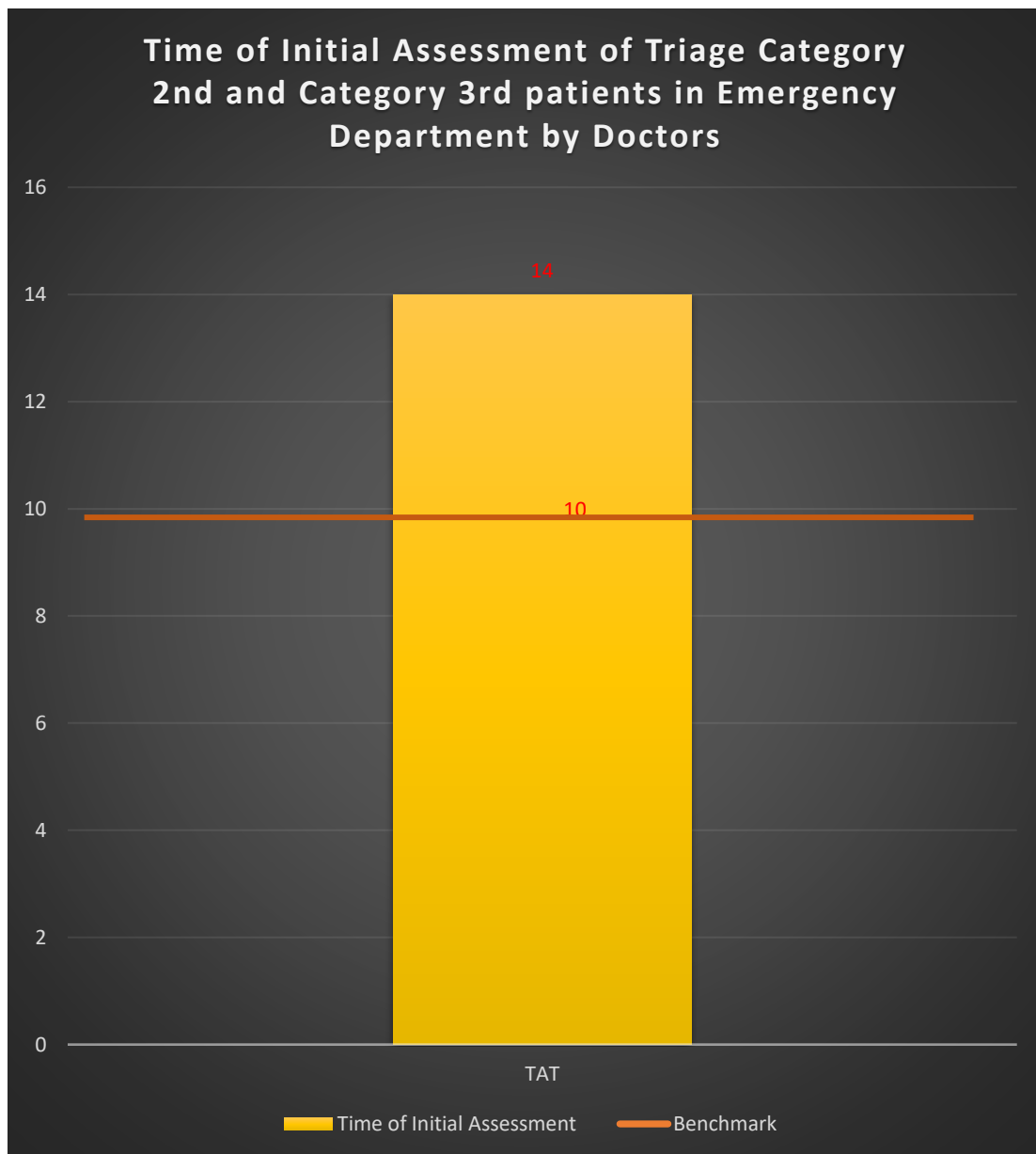


Fig : Average Turn Around Time of Initial Assessment (March)

Healthcare executives and clinicians can get insight into possible areas for improvement by assessing the current turnaround time and the degree to which it deviates from hospital standards. This knowledge can direct initiatives and actions targeted at shortening the time required for initial evaluations and ensuring that emergency patients receive prompt and adequate care.

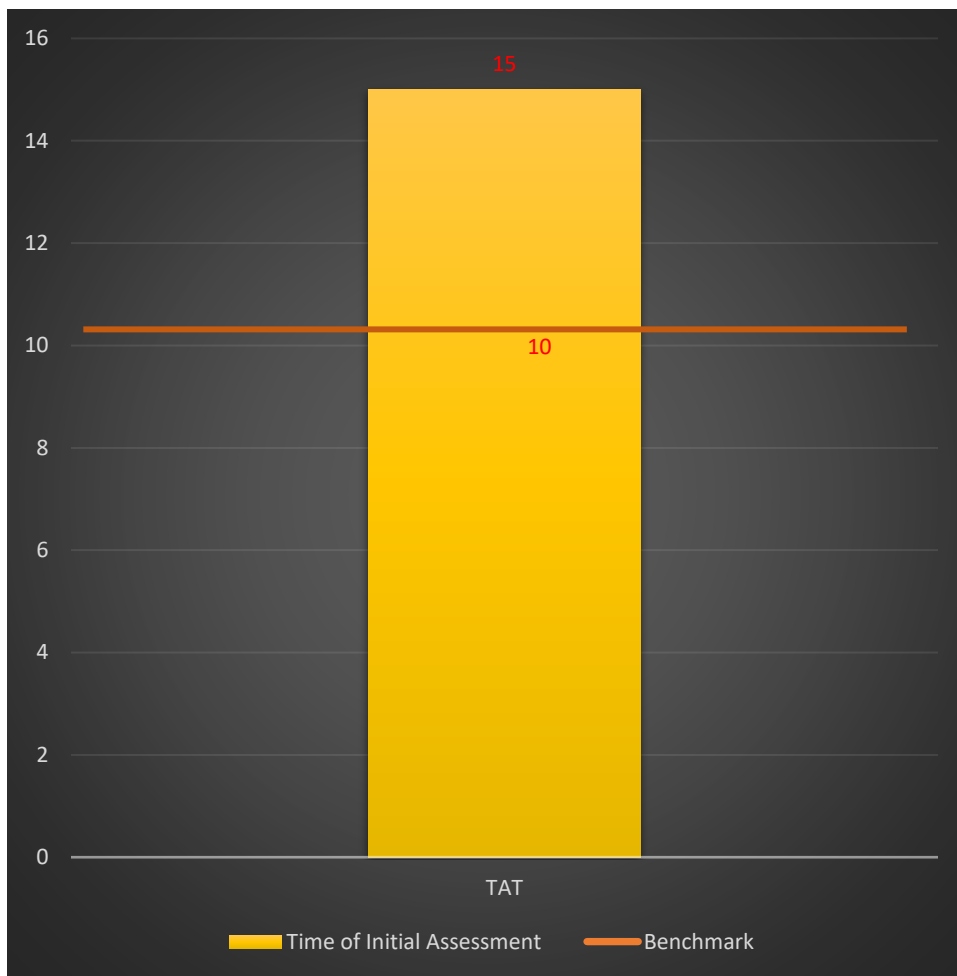


Fig: Average Turn Around Time of Initial Assessment (April)

A thorough understanding of the factors influencing lengthier first assessment times will be possible with additional examination of the study's data. As a result, it will be possible to identify the precise areas of the evaluation process that need attention and development. Healthcare practitioners may improve resource allocation, optimize process, and put effective interventions in place to shorten the turnaround time for initial evaluations by addressing these variables.

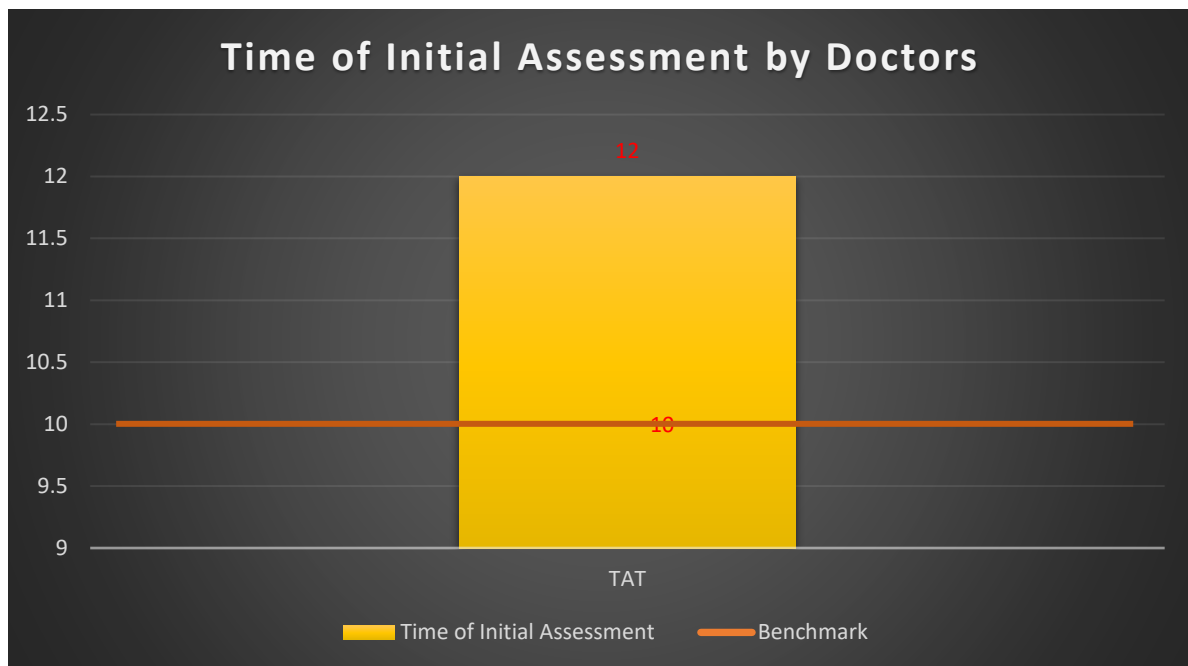


Fig: Average Turn Around Time of Initial Assessment (May)

Objective 2nd - To analyze factors contributing to initial assessment delays.

1. **The arrival of the patients and their triage:** When patients are first triaged and their conditions are evaluated for severity, delays might happen. The procedure of assigning priority levels and starting the evaluation might be delayed due to issues including congestion, a high patient load, and a lack of staff.

There are several aspects of this procedure that might cause delays:

- a) **Overflowing of Patients:** High patient traffic or congestion in the emergency room might put a burden on the services there and delay the first assessment. It may be difficult to quickly accommodate all patients due to physical space restrictions, a lack of exam rooms, and a staffing shortage.
- b) **Numerous Patients:** The triage system can become overburdened by a large intake of patients, which slows the process of allocating priority levels. Patients may have to wait longer before being seen by a doctor as a result of the triage nurses' and staff's increased workload.
- c) **Insufficient Staffing:** Delays in the initial assessment may be caused by insufficient personnel levels during peak hours or times of an increase in patient intake. Patients may

have to wait longer for evaluations when there aren't enough medical personnel on hand to do so quickly.

d) **Triage Precision:** The turnaround time for the initial evaluation might be impacted by the precision and efficacy of the triage procedure itself. A patient may not receive the essential medical care on time if the severity of their disease is not properly determined during triage.

e) **System Efficiency for Triage:** The effectiveness of the triage system, particularly the triage nurse's capacity to assess patients promptly and accurately, distribute resources, and coordinate with other healthcare professionals, is vital in reducing delays. Longer patient wait times can have an adverse effect on how quickly patients are examined by doctors.

Ineffective triage procedures can cause these delays.

2. **Resource Availability:** Initial evaluation delays may result from a lack of key resources, including exam rooms, medical equipment, and diagnostic services. Longer patient wait times might delay doctors' examination of the patient due to a lack of resources.

Initial evaluation times can be delayed by low staffing levels, especially during busy times or times when there is a significant volume of patients.

This aspect may be addressed by simplifying collaboration with support services, increasing bed capacity where practical, optimizing personnel levels, and making sure there is an adequate supply of necessary equipment and supplies. Healthcare organizations can increase resource availability, which will increase the effectiveness of the first evaluation procedure and decrease delays in giving emergency patients prompt medical attention.

3. **Levels of staffing:** Initial assessments may be delayed by inadequate staffing levels, especially during busy times or periods of a rise in the number of patients. The entire turnaround time may be impacted by patient wait times that are prolonged due to a lack of medical staff.

Delays may result from a number of staffing-related causes, including:

- a) **Doctors are not sufficient:** Initial evaluations may take longer to complete if there are not enough doctors working in the emergency room. It is difficult to care for patients quickly and effectively when there are fewer doctors available than there are patients. Initial evaluations may be delayed as a result of patients having to wait a long time to see a doctor.
- b) **Numerous Patients:** High patient traffic might tax the available medical staff and prolong the initial evaluation procedure, especially during busy times or periods of heightened demand. It becomes difficult to offer prompt evaluations to every person seeking emergency treatment when there are more patients than the doctors can efficiently handle.

c) **Specialty Capabilities:** The turnaround time for initial evaluations might also be impacted by the accessibility of doctors with specialised knowledge relevant to emergency circumstances. Depending on their illness, some individuals might need to see a particular expert for an evaluation, such a cardiologist or a neurologist. Initial evaluations may be delayed and waiting times may increase if there aren't enough specialised doctors available in the emergency room or if they're delayed in being consulted.

Optimising staffing numbers to ensure there are enough doctors available to meet the patient load may be one strategy used to solve this issue. This might entail hiring more doctors, creating flexible scheduling plans, or using telemedicine technology to receive expert advice remotely. Healthcare organisations may boost first assessments' effectiveness and guarantee prompt care for emergency patients by addressing staffing level issues.

- 4. **Processes for documenting and administrating:** Initial assessments may be delayed by protracted paperwork processes and administrative activities include gathering patient data, confirming insurance information, and filling out relevant documents. Physicians could need to spend more time on administrative tasks, which would leave less time for providing direct patient treatment. Delays may be caused by a number of administrative and documentation-related causes, including:

a) **Process of Registration and Triage:** Upon entering the emergency room, patients normally go through a registration and triage procedure where their personal data, medical background, and current symptoms are noted. Long lines or a lack of staff at the registration desks might cause delays in this procedure, which can then delay the physicians' first evaluation.

b) **Documentation and data entry:** During the first examination, doctors and other healthcare professionals are frequently expected to fill out several forms, record patient information, and input data into electronic health records (EHRs). Excessive paperwork or ineffective data entry procedures can take up significant time and take focus away from providing direct patient care, delaying the evaluation process.

c) **Communication Among Departments:** For accurate evaluations, efficient coordination and communication between many departments, including radiology, the lab, and the pharmacy, are essential. The entire turnaround time for initial evaluations might be greatly impacted by delays in gathering test findings or organising essential investigations.

d) **Responsibilities for administration:** Other administrative duties that doctors in the emergency room may have include reviewing and approving patient paperwork, maintaining medical records, and attending meetings. If these administrative activities are not well managed, it may take longer to provide patients their initial examinations on time.

This issue may be addressed by reducing the documentation process, putting in place electronic medical records systems to allow for effective data entry, enhancing interdepartmental communication channels, and improving administrative procedures. Healthcare organisations may increase the effectiveness of first evaluations and reduce delays in the delivery of emergency treatment by lowering administrative burdens and improving documentation processes.

5. **Managing care complexity and multidisciplinary consultations:** Initial evaluations could take longer for patients with complicated medical issues or those who need

advice from other doctors. Doctors may need more time to adequately assess a patient if they have to coordinate and schedule visits with other medical specialists.

Delays may be caused by a number of aspects of sophisticated medical treatment and interdisciplinary consultations, including:

- a) **Cases' Seriousness and Complexity:** Patients with varied degrees of severity and complexity of illnesses are frequently seen in emergency rooms. Due to the necessity for doctors to connect with several experts and healthcare providers, patients who require comprehensive diagnostic testing, specialised consultations, or treatments may suffer lengthier turnaround times for initial assessments.
 - b) **Consultations with a Multidisciplinary Team:** To ensure thorough and proper patient management, doctors may occasionally need to seek advice from or consult with other healthcare specialists from various specialities, such as surgeons, cardiologists, or neurologists. The timing of these interdisciplinary consultations might vary depending on their availability and coordination.
 - c) **Investigations in the laboratory and using radiology:** Delays in the first evaluation may also be caused by the requirement for radiological or laboratory studies. To decide on the best course of treatment for a patient, doctors may need to wait for the availability of imaging reports, laboratory test results, or advice from radiologists or pathologists.
 - d) **Assignment of Resources:** Initial evaluations' effectiveness may be impacted by the accessibility of resources including critical care beds, operating rooms, and specialised equipment. Due to the requirement to prioritise and deploy resources depending on the urgency and complexity of situations, limited resource availability may cause delays.
- Healthcare institutions might concentrate on enhancing care coordination, enhancing channels of communication across various specialities, and putting in place standardised protocols for multidisciplinary consultations to address this issue. Enhancing resource allocation techniques, such as scheduling diagnostic tests

effectively and guaranteeing timely access to specialised services, can also help shorten the time it takes to examine emergency patients.

6. **Analyses and results of diagnostic tests:** The need for diagnostic tests, such as laboratory investigations, radiographic imaging, or specialist therapies, may cause delays in the first examination. By delaying a complete review while awaiting test results, patients' turnaround times may be prolonged.

Delays in diagnostic testing and outcomes may be caused by a number of circumstances, including:

- a) **Access to Diagnostic Tests:** Emergency rooms utilise a variety of diagnostic methods, including laboratory tests, radiographic imaging, and specialist procedures, to assist in the evaluation and diagnosis of patients. If access to these tests is delayed because of inadequate equipment, a lack of personnel, or an overwhelming demand, the first evaluation process can be protracted.
- b) **Setting test order and priority:** Doctors must determine if diagnostic tests are required based on the patient's clinical presentation and likely ailments. How the tests are selected and arranged in accordance with their urgency and availability may have an impact on how long the first review takes. Variables including test slot availability, prioritising rules, and cooperation with the laboratory or radiology department can all have an impact on how well tests are ordered.
- c) **Time it takes to receive test results:** The length of time needed to receive and understand the findings of diagnostic testing might impact the entire turnaround time. Making educated judgements and starting the proper therapy may take longer when some tests require more processing or interpretation time.
- d) **Reporting of Results:** For prompt decision-making, effective test findings communication to the treating physician is essential. Long turnaround times for the initial assessment can be attributed to delays in result communication, whether these delays are brought on by technological difficulties, a lack of available communication channels, or organisational inefficiency.

The availability and prioritisation of diagnostic tests can be optimised by healthcare organisations to meet this issue. This may entail accelerating the ordering of tests,

supplying sufficient employees and resources, and putting in place methods for quick communication and result reporting. Collaboration between the emergency room, laboratory, and radiology departments can improve coordination and reduce wait times for receiving and analysing test findings.

7. Processes for handover and communication: Delays in the initial assessment can be caused by ineffective communication and handoff procedures among various healthcare personnel, including doctors, nurses, and emergency medical technicians. Delays in the evaluation process might result from poor communication that prevents the timely transfer of information and patient handover.

Delays may be caused by a number of communication and handover-related factors, including:

- a) Communication Among Departments: To ease patient treatment in a hospital environment, emergency departments frequently work with other departments, such as radiology, laboratory, or speciality departments. The completion of the first evaluation might be hampered by delays in interdepartmental communication, such as when requesting consultations or reports from other departments.
- b) Change of Shift: Communication breakdowns and delays in the continuity of patient care might result from shift changes and handovers between various medical teams. Poor or ineffective handover procedures might cause decision-making to be postponed and increase the duration of the first evaluation.
- c) Communication Difficulties: For prompt decision-making, effective communication amongst healthcare providers is crucial. The transmission of critical information might be hampered by communication hurdles, such as linguistic ones, misunderstandings, or inefficient routes of communication, which can delay the first evaluation.
- c) Retrieval of Information and Documentation: Effective communication and handover depend on thorough documentation of patient data. The initial

evaluation procedure may be slowed down by delays in recording pertinent patient information or in locating reliable data from prior medical records.

Healthcare institutions might concentrate on enhancing communication procedures and putting in place standard handover protocols to solve this issue. This may entail improving interdepartmental communication channels, making sure that suitable documentation and information retrieval systems are in place, and offering training on efficient communication techniques to medical personnel. A fluid communication and information sharing procedure may be facilitated throughout the initial evaluation and handover phase by utilising technological solutions, such as electronic health records and encrypted messaging platforms.

8. Situations of Emergence and Critical Cases: Medical officials' attention and resources may be diverted by unanticipated crises or urgent situations that demand immediate treatment, delaying the first evaluation of additional patients. Priority may be given to urgent situations, thereby extending wait times for individuals with less serious diseases

The abrupt, life-threatening events that demand urgent attention and response can happen to doctors in a busy emergency room. These situations might include respiratory difficulties and neurological problems, as well as cardiac arrests and serious injuries. When such serious situations occur, doctors must focus their attention and resources in order to deliver quick and life-saving care. As a result, individuals with less serious diseases might have to wait longer for their initial evaluations.

Lack of resources: Intensive monitoring, specialised tools, and devoted medical personnel are frequently needed in critical instances. When there are more severely sick patients than there are resources to treat them, doctors may be overworked, which can cause delays in early evaluations of non-critical cases. Delays may be made worse by the scarcity of critical care beds, resuscitation tools, or specialised medical staff.

Complications in Medical Treatment Patients with complicated illnesses or many comorbidities are frequently involved in critical instances. Such situations need to be evaluated and managed with more time and resources spent on gathering thorough medical histories, reviewing test findings from earlier tests, and consulting with other

experts. Due to clinicians prioritising the early evaluations of serious situations, people with less urgent problems may encounter delays.

Making Decisions Together: Critical situations sometimes need for multidisciplinary collaboration and consultation with other medical specialists, such as surgeons, intensivists, or experts from different departments. Although essential for the best patient care, these consultations may add extra stages and coordination requirements, which may cause delays in the initial evaluation procedure.

Hospitals can use techniques like triage systems, which successfully prioritise patients depending on the seriousness of their ailments, to reduce delays associated with emergencies and critical situations. Additionally, maintaining an appropriate number of medical professionals, critical care resources, and efficient communication channels can aid in optimising the initial evaluation process and minimising delays for all patients, including those with critical conditions.

9. **Educating and training the workforce** The availability of doctors for initial assessments may be impacted by their participation in educational activities like teaching sessions or training courses. The amount of time allotted for instructional activities may decrease the time set aside for patient assessments, causing inefficiencies in the initial examination procedure.
 - a) The following CMEs and workshops are available to physicians: CME meetings, seminars, and training courses are frequently necessary for doctors in order to advance their education. Even while these teaching initiatives are important, they may keep doctors away from the emergency room, which might cause delays in early evaluations while they are gone.
 - b) **Simulation Instruction:** An efficient way to improve clinical abilities and decision-making is through simulation-based training. However, the need for doctors to engage in simulation sessions may temporarily restrict the number of doctors present in the emergency room, delaying early evaluations.

c) Refresher courses for skills: To make sure they continue to be competent in carrying out crucial operations, healthcare personnel may need to periodically take skill refresher courses or competence evaluations. Although these procedures are crucial for patient security, they may briefly cause delays in early evaluations.

Hospitals can use techniques like arranging educational sessions during off-peak hours or planning training activities to minimise the disturbance of routine emergency department operations to lessen the effect of training and educational activities on first assessment delays. In order to guarantee proper coverage and prompt first evaluations of emergency patients, hospitals might also think about using an adequate quantity of medical professionals or implementing alternative coverage plans during training sessions.

10. Factors related to the system and the organization: Delays in the initial assessment can be caused by a number of organisational and structural issues, including insufficient departmental coordination, poor triage systems, inefficient workflow procedures, and a lack of standardised norms. To improve patient flow and shorten turnaround times, it is critical to recognise and treat these systemic problems.

Shortage of Adequate Resources: A shortage of assets, such as medical instruments, diagnostic tools, and supplies, may result in a delay in the initial assessment. Lack of resources may result in longer wait times for diagnostic tests or procedures, prolonging the examination of the patients. For effective patient assessments, a sufficient and well-maintained inventory of resources must be provided.

A lack of medical professionals, nurses, and support workers can have a substantial negative influence on how quickly initial evaluations are completed. Increased workload and delays in providing rapid patient care might be caused by high patient loads, unanticipated surges, or personnel shortages. It is essential to handle this aspect by ensuring enough workforce levels, optimising shift patterns, and taking task allocation into account.

Issues with Communication and Coordination: Delays in the initial evaluation process may be caused by poor communication and coordination between departments and healthcare experts. Delays may be caused by inefficient communication routes,

unclear information-sharing rules, and misunderstandings about patient information. This problem can be solved with the use of effective communication systems, multidisciplinary collaboration, and established lines of communication.

Not having Standardised procedures: Variations in practise and delays might result from the absence of or inconsistent application of standardised procedures for initial assessments. A methodical and efficient approach may be ensured by having defined rules and processes for completing initial assessments, including history-taking, physical exams, and ordering diagnostic testing. Standardised processes can improve effectiveness and decrease holdups in patient assessments.

Lack of Education and Training: Healthcare professionals participating in the initial assessment process may not have had proper education and training, which might affect the speed and calibre of evaluations. Delays or subpar patient care may result from a lack of expertise or understanding in a particular field, such as critical care or specialised evaluations. This issue may be resolved by offering healthcare personnel regular training, continuing education opportunities, and skill development chances.

A comprehensive strategy combining quality improvement efforts, resource allocation, process optimisation, personnel training, and successful communication methods is needed to address these systemic and organisational problems.

Hospital may increase the effectiveness and speed of the first evaluation process in the emergency department by recognising and addressing these concerns.

Objective 3rd - To propose interventions for increasing efficiency and decreasing the duration of initial assessments in emergency departments.

1. **Improvements to the triage process:** Prioritising evaluations may be achieved by using a designed effectively triage system that rapidly and reliably classifies patients

depending on the seriousness of their conditions. This prevents delays for individuals who need urgent treatment and guarantees that individuals with more serious diseases get quick attention.

Several tactics can be used to speed up the triage process. This comprises:

Simple Triage Rules: Making consistent and accurate evaluations is made possible by the development of clear and thorough triage rules that specify the standards for each class, such as emerging, urgent, and non-urgent. These recommendations ought to take the emergency department's particular requirements and goals into account.

To make sure that triage nurses and other healthcare professionals comprehend the triage rules and can effectively assess patients' status, it is crucial to equip them with training and instruction. The emphasis of training should be on identifying urgent or life-threatening situations and making decisions quickly and with knowledge.

Skills and technologies for triage: Using the right tools and technology may make the process easier. This could entail the use of computerised triage systems, which direct medical professionals through a sequence of inquiries to assess the severity of the illness of a patient. For urgent situations, these systems may send out real-time notifications, guaranteeing prompt response.

Expertise of the triage nurses: It is essential to have qualified nurse triage specialists who can accurately prioritise patients and do evaluations. Excellent communication abilities, clinical judgement, and the capacity to manage demanding circumstances are required of these nurses.

Periodic Triage Reviews: Regular triage audits assist to discover opportunities for improvement and to make sure that defined standards are being followed. The precision of triage classification may be evaluated, any delays or obstacles in the process can be found, and comments for ongoing quality improvement can be given.

Assessment Zone Optimisation: It's critical to plan the triage area's physical layout to facilitate effective patient flow. This is done in the emergency room. It need to be well-organized, accessible, and furnished with all the tools required for speedy evaluations.

Reduced waiting times for initial assessment can be achieved by expediting the triage procedure, which allows healthcare personnel to rank patients according to their clinical requirements. With this intervention, patients with urgent or life-threatening disorders will receive prompt care, improving the efficiency of emergency department care.

Optimal process Layout: Improper delays can be reduced by streamlining the emergency department's process. Rearranging physical spaces, increasing the availability of relevant tools and supplies close to evaluation locations, and creating unambiguous patient movement patterns can all help achieve this.

The tactics listed below can be used to create an effective workflow in the emergency room:

Procedure Modelling: A comprehensive process mapping exercise is helpful in locating bottlenecks, pointless procedures, and inefficient regions in the evaluation process. In order to achieve this, the actions that took place from the time the patient arrived until the initial evaluation was finished must be recorded and analysed. The workflow may be streamlined and chances for improvement can be found by healthcare practitioners by visualising the process.

Defined Procedures: By creating and putting into place standardised protocols and rules for the assessment process, healthcare professionals may adopt a consistent and effective strategy. These procedures should specify the actions, evaluations, and interventions needed during the preliminary evaluation. Standardisation guarantees a methodical approach, lowers diversity in practise, and encourages prompt decision-making.

Set duties and Obligations: It is easier to coordinate treatment when duties and responsibilities of medical professionals—including physicians, nurses, and support staff—involved in the initial evaluation process are made clear. Each team member has to be aware of their individual responsibilities and how they fit into the larger workflow. For effective patient treatment, team members must collaborate and communicate effectively.

Activity Prioritisation: For effective workflow design, jobs should be prioritised according to their urgency and significance. Prioritising crucial jobs, such as

evaluating and stabilising patients with life-threatening diseases, is important for healthcare professionals. Non-urgent duties should be managed effectively. By doing this, it is made sure that less urgent tasks do not postpone time-sensitive examinations.

The optimal Resource Distribution: Delays may be greatly decreased by making sure that essential assets, such as medical gear, diagnostic equipment, and drugs, are nearby the assessment area. Healthcare professionals may concentrate on the evaluation process since efficient resource allocation cuts down on the time needed for gathering and preparing relevant items.

Creating a culture of continual enhancement of quality makes it easier to spot inefficient areas and make the required adjustments. Healthcare providers may track their progress, pinpoint inefficiencies, and make timely modifications thanks to regular evaluations of performance, feedback channels, and quality improvement programmes.

Healthcare providers may expedite the assessment process, reduce unneeded delays, and maximise resource utilisation by developing an effective workflow. This intervention increases the general effectiveness of first evaluations in the emergency room, improving outcomes for patients and satisfaction.

2. **Maximizing staffing:** Assessment delays can be minimised by ensuring enough personnel and a proper distribution of medical specialists across the emergency room. This might entail keeping an eye on trends in patient load, altering staff schedules to coincide with busy times, and thinking about using more support workers or advanced practise clinicians to help with initial evaluations.

The following tactics can be used to optimise manpower in the emergency room:

Workforce Evaluation: To establish the ideal number of healthcare professionals needed to handle the workload, a thorough assessment of staffing needs must be conducted. The number of patients, degree of acuity, and peak hours should all be taken into account during this evaluation. Healthcare institutions can modify workforce levels by precisely forecasting demand.

Variable Timing: Using alternatives like split schedules and on-call arrangements, flexible scheduling can assist match worker availability with patient traffic patterns. This adaptability guarantees that there are enough healthcare experts on hand during busy periods and allows for adjustments during times of low patient flow. Patient wait times are decreased because to effective scheduling, which also maximises staff use.

Multitasking and competence mix: Giving healthcare workers the chance to take part in cross-training programmes helps them be able to handle a broader spectrum of jobs. Healthcare institutions may more efficiently divide workload and handle changes in patient traffic by training a multi-skilled workforce. In order to maximise productivity and minimise delays, the skill mix may also be optimised by assigning jobs in accordance with the level of competence.

Prompt Reaction Squads: Putting in place fast response teams made up of skilled medical personnel might aid in handling urgent situations quickly. When there is a sudden rush of patients or in emergency situations, such squads can be mobilised to make sure that patients receive examinations and interventions on time. Teams with rapid response capabilities speed up turnaround times and improve the emergency department's general responsiveness.

Workflow Assessment and Modifications: Regular workflow analysis and evaluation of the task allocation among employees are essential for workforce optimisation. Healthcare institutions can see congestion, bottlenecks, and peak demand periods thanks to this monitoring. Based on this data, changes may be made to guarantee that enough staff is assigned to regions that need extra assistance, hence avoiding delays.

Employees Participation and Information: Promoting good communication channels and incorporating workers in decision-making procedures can help increase employee happiness and engagement. Actively seeking feedback on staffing requirements, process enhancements, and resource allocation from healthcare professionals may produce insightful findings and foster a feeling of responsibility. Initial evaluations have a higher probability to be effective overall when staff members are motivated and effective in their jobs.

Healthcare institutions may improve the speed and calibre of first evaluations in the hospital's emergency room by optimising personnel levels and putting into practise initiatives to increase employee effectiveness. By ensuring that there are enough healthcare experts on hand to satisfy patients' requirements, this intervention helps to shorten wait times, boost patient satisfaction, and enhance patient outcomes.

3. **Assessment protocols that are standardized:** By being created and used, standardised evaluation techniques can increase output and reduce variability in initial assessments. These processes can provide precise directions for diagnostic tests and suggestions, clarify the important components of assessments, and expedite the information-gathering process. Standard processes ensure that all necessary actions are carried out quickly and consistently.

Implementing standardised assessment processes requires the following components:

Protocol Building: For the initial assessment of individuals in the emergency department, healthcare facilities should create evidence-based protocols or recommendations. The main procedures, evaluations, and interventions necessary for various patient types and illnesses should be outlined in these protocols. To help healthcare professionals make effective decisions, they should be thorough but succinct.

Instruction and Training: It is crucial to give healthcare workers the necessary training and instruction on the standardised assessment methods. This guarantees that every member of the staff is familiar with the procedures, recognises their significance, and knows how to use them in practise. The dissemination of knowledge and continuing assistance can be accomplished through seminars, classes, and instructional resources.

Workflow Integration: Standardised evaluation techniques must be easily included into the emergency department's workflow in order to be as successful as possible. This might entail creating standardised documentation templates, integrating the standards into electronic health record systems, or using decision assistance technologies. Integration guarantees that healthcare professionals may readily access

and adhere to the guidelines during the evaluation process, minimising delays and mistakes.

Standardised assessment methods should be evaluated and revised on a regular basis to reflect modern best practises and developing clinical recommendations. This guarantees that the procedures continue to be applicable and useful in enhancing the effectiveness of early assessments. When modifying the procedures, it is important to take into account patient results, feedback from healthcare experts, and developments in medical knowledge.

Healthcare institutions should set up systems for quality control and oversight to guarantee that the established assessment standards are followed. Regular audits, performance reviews, and feedback sessions may be used to find areas that can be improved as well as to offer chances for continued coaching and assistance. It is possible to continuously improve and optimise the evaluation process by keeping track of how the procedures are being used.

The emergency department's first evaluations are more consistent and effective when standardised assessment processes are used. It encourages a methodical approach to patient assessment, lowers practise variability, and speeds up decision-making. Healthcare workers may prioritise examinations, speed up critical procedures, and enhance the general standard of care given to patients attending the emergency department by adhering to set protocols.

4. **Sharing of information and enhanced communication:** To cut down on delays, healthcare personnel participating in the initial evaluation phase must communicate better. Implementing effective communication technologies, such as digital health records or secure messaging platforms, can promote timely information transmission. The assessment process can be accelerated by having open lines of communication with experts and other departments.
5. **Consistent Quality Enhancement:** The initial assessment approach may be made more efficient by identifying bottlenecks and potential improvement areas by creating a culture of continual quality improvement. Frequent assessment of performance, analysis of data, and feedback systems can identify areas where processes can be

improved, system inefficiencies can be fixed, and evaluation procedures can be improved.

Important components of a CQI methodology implementation:

Information Gathering and Analysis: It is crucial to gather pertinent information on the first assessment procedure, including turnaround time, client satisfaction ratings, and particular performance metrics. Computerized medical records, patient questionnaires, and feedback systems can all be used to collect this information. The evaluation process may be improved upon by locating problem areas, obstructions, and recurring delays through data analysis.

Performance Metrics: By creating metrics for performance and standards for the first assessment phase, it is possible to evaluate the workflow's efficacy and efficiency in a neutral manner. A few key performance measures include the typical turnaround time, the proportion of evaluations finished on time, and patient satisfaction scores.

Performance measurements are regularly monitored and reported, allowing for the detection of weaknesses and chances for development.

The Root-Cause Assessment: This procedure identifies the fundamental reasons for any postponements or inaccuracies in the initial assessment phase. This entails a thorough analysis of the causes of the delays, including workflow problems, resource shortages, or poor communication. When creating focused treatments to address the issues that have been found, understanding the fundamental causes is helpful.

Initiatives for Improving Quality: Particular initiatives for Improving Quality might be put into action based on the outcomes of analysis of data and root cause analysis. These activities could involve process reengineering, reworking the workflow, personnel training, allocating resources, or implementing new technology. Effective implementation of these strategies depends on coordinated efforts by healthcare professionals, managers, and other stakeholders.

Frequent Review and Discussion: The Continuous Quality Improvement requires the establishment of an atmosphere of transparent communication and feedback. It promotes an atmosphere of ownership and participation to invite healthcare experts to offer comments, recommendations, and suggestions regarding the evaluation process.

The status of CQI efforts can be communicated through surveys, forums, or meetings that are held on a regular basis to collect input.

Assessment and Review: As an iterative process, Continuous Quality Improvement necessitates continuous assessment and revision. Adopted interventions' success is often assessed by reevaluating their effects, comparing performance to predetermined standards, and soliciting stakeholder input. The evaluation's results feed subsequent development and direct the assessment procedure's fine-tuning.

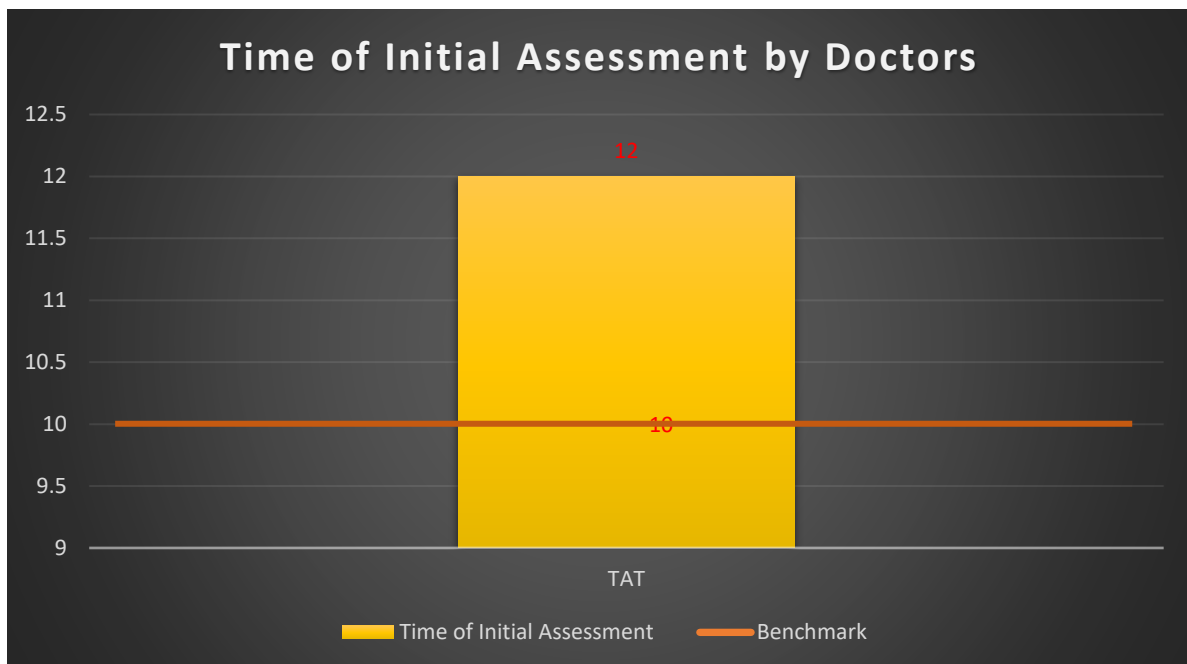
Learning Environment: Fostering a culture of learning inside the emergency room encourages continual development. An environment of creativity and advancement is promoted by encouraging healthcare personnel to exchange experiences, learn from one another's best practises, and take part in educational events. Participating in workshops, professional development opportunities, and the dissemination of evidence-based practises all support continual learning and growth.

Hospital can systematically resolve inefficiencies, streamline procedures, and improve the overall effectiveness of the initial evaluation in the emergency department by putting continuous quality improvement initiatives into place. Healthcare personnel may optimise operations, proactively detect and fix concerns, and ultimately enhance the results for patients and experiences with the help of the Continuous Quality Improvement .

Conclusion and Discussion

The intent of the study, "A Study on Time Taken for Initial Assessment of Emergency Patients by Doctors at Sri Action Balaji Medical Institute," was to measure the length of time medical officers took to evaluate inpatients as well as the causes that caused delays.

The hospital's maximum allowable time for non-resuscitation cases was 10 minutes, however the typical turnaround time for initial assessment by doctors in the emergency department was determined to be 14 minutes.



Initial assessments were delayed due to a number of factors, including the availability of resources, staffing levels, administrative and documentation procedures, multidisciplinary consultations and the complexity of care, examinations and results, conversation and handover procedures, crises and emergencies, systemic and organisational issues, and educational and training initiatives.

Improved triage systems, effective workflow design, staff optimisation, standard assessment protocols, enhanced relationships and handover procedures, ongoing enhancement of quality, and technology leveraging for streamlined processes are some of the interventions that were found to be effective at increasing efficiency and cutting the length of initial assessments.

Conclusion

The study emphasises the need of resolving the identified causes of initial assessment delays. The emergency department may increase its effectiveness and shorten the turnaround time for first evaluations by putting in place focused interventions. The initial assessment approach must be optimised by effective resource allocation, suitable workforce levels, streamlined administrative and documentation procedures, and open lines of communication.

The uniformity and efficacy of initial assessments may be improved by the use of standard assessment methods and initiatives for ongoing quality improvement, which will improve the results for patients and overall satisfaction. The results highlight the value of continued training and education for health care providers to improve their abilities and effectiveness in doing initial evaluations. Hospital may further streamline and hasten the initial assessment process by taking a patient-centered strategy and utilizing technological solutions, such as medical records that are electronic and communication platforms.

The findings underline how important it is for healthcare professionals to continue learning and developing in order to enhance their skills and efficiency while conducting first evaluations. By adopting a patient-centered approach and employing technology solutions, such as electronic medical records and communication platforms, the hospital may further streamline and accelerate the initial evaluation process.

ANNEXURE

For Collection and Analysis of Data

S.No	Patient's UHID	Admitting Physician's Name	The time at which the patient arrived in the emergency department (t1)	The time at which the doctor performed the initial assessment (t2)	the time frame of the assessment procedure (t3) $t3 = t2 - t1$

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