



The Relationship Between Accuracy of Triage Implementation and Patient Waiting Time in the Emergency Department (ER)

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ABSTRACT

Triage implementation is an important process in Emergency Department (ER) services to determine the priority of patient care based on the level of emergency. The accuracy of triage implementation greatly affects the efficiency of services and patient waiting time in receiving medical treatment. This study aims to determine the relationship between the accuracy of triage implementation and patient waiting time in the Emergency Department (ER). The study used an analytical design with a cross-sectional approach. The study sample consisted of 70 patients who came to the ER and were selected using a purposive sampling technique. Data were collected through observation and recording of patient medical records. Data analysis used the chi-square test. The results showed that patients with appropriate triage had a faster waiting time than patients with inappropriate triage. The results of the statistical test showed a p value = 0.021 ($p < 0.05$). It was concluded that there was a significant relationship between the accuracy of triage implementation and patient waiting time in the ER.

Keywords: *Triage, Patient Waiting Time, Emergency Room, Health Services*

1. INTRODUCTION

The Emergency Department (ER) is a healthcare unit that provides first-line care for patients with emergencies. Service in the ER is required to be fast, precise, and effective because it directly impacts patient safety.

One system used to prioritize services in the emergency room is triage. Triage is the process of grouping patients based on their level of urgency so that those in the most critical condition receive treatment first.





Proper triage implementation is crucial to ensuring efficient emergency department services. Inaccurate triage implementation can lead to delays in treatment for patients requiring immediate intervention.

Patient waiting time is one indicator of the quality of hospital service. Excessive waiting times can decrease patient satisfaction and potentially worsen a patient's condition.

This study aims to determine the relationship between the accuracy of triage implementation and patient waiting time in the Emergency Room.

2. RESEARCH METHODS

a. Research Design

This study uses an analytical design with a cross-sectional approach.

b. Population and Sample

The research population was all patients who came to the emergency room of hospital X during the research period. The sample size was 70 patients selected using purposive sampling technique.

c. Inclusion Criteria

- 1) Patients who came to the ER during the study period
- 2) Have complete triage data
- 3) Willing to be a research respondent

d. Research Variables

- 1) Independent variable: accuracy of triage implementation
- 2) Dependent variable: patient waiting time

e. Data collection

Data obtained through:

- 1) observation of triage implementation
- 2) recording of patient arrival time and handling time
- 3) patient medical records

f. Data analysis

Data analysis was performed using:

- 1) descriptive analysis
- 2) chi-square test with a significance level of 0.05.





3. RESEARCH RESULTS AND DISCUSSION

a. Research result

1. Respondent Characteristics

This study involved 70 patients who visited the Emergency Department during the study period. Respondent characteristics included gender, age, and triage category.

Table 1. Respondent Characteristics

Characteristics	n	%
Gender		
Man	38	54.3
Woman	32	45.7
Age Group		
<20 years	10	14.3
20–40 years	34	48.6
>40 years	26	37.1
Triage Category		
Red (emergency)	12	17.1
Yellow (urgent)	28	40
Green (non-urgent)	30	42.9

The majority of patients fall into the yellow and green triage categories . This indicates that the majority of patients arriving at the emergency room are still in a condition requiring treatment but are not in critical condition.

2. Accuracy of Triage Implementation

Triage implementation is assessed based on the suitability between the triage category given and the patient's clinical condition.

Table 2. Distribution of Triage Accuracy

Triage Accuracy	n	%
Appropriate	42	60
Not exactly	28	40





Most triage procedures are carried out correctly by healthcare workers. However, 40% of cases still show inaccuracies in determining triage categories. inaccuracy can be caused by various factors such as high workload, limited health workers, and lack of experience of triage officers.

3. Patient Waiting Time Distribution

Patient waiting time is calculated from when the patient arrives at the ER until they receive first aid from health workers.

Table 3. Distribution of Patient Waiting Time

Waiting Time	n	%
Fast (<10 minutes)	40	57.1
Long (\geq 10 minutes)	30	42.9

The study results showed that most patients received treatment with a waiting time of less than 10 minutes. This indicates that emergency room services are relatively responsive in providing initial treatment to patients.

4. Triage Accuracy and Patient Waiting Time

Table 4. Relationship between Triage Accuracy and Waiting Time

Triage Accuracy	Fast Waiting Time	Long Wait Time	Total
Appropriate	30	12	42
Not exactly	10	18	28
Total	40	30	70

Chi-square test show the value $p = 0.021$. Because $p < 0.05$, it can be concluded that there is a significant relationship between the accuracy of triage implementation and patient waiting time in the ER.

5. Long Wait Time Risk Analysis

Table 5. Risk of Long Waiting Times

Triage Accuracy	Risk of Long Wait Times
Appropriate	28.6%
Not exactly	64.3%

These results indicate that patients with inappropriate triage have more than twice the risk of long waiting times compared to patients with appropriate triage.





b. Discussion

The study results showed that accurate triage implementation significantly impacted patient waiting times in the Emergency Department. Patients who received appropriate triage tended to receive faster care than those who made errors in triage category determination .

Triage is a crucial initial process in the emergency department (ER) care system. This process aims to prioritize patient care based on the severity of the emergency . With proper triage implementation , healthcare workers can identify patients requiring immediate care, thereby minimizing the risk of delays.

Inaccuracy Triage can lead to errors in prioritizing patients. This can potentially result in patients with serious conditions having to wait longer for medical treatment. Patient waiting time in the ER is also influenced by several other factors such as the number of patients arriving, the availability of health workers, and the capacity of the service room.

In crowded emergency rooms, an effective triage system is crucial to ensure that patients with the most critical conditions receive treatment first.

The findings of this study indicate that improving healthcare workers' competency in triage implementation is crucial for improving the quality of care in the emergency department. Regular triage training can help healthcare workers improve their ability to assess patient conditions quickly and accurately. a standardized triage system such as Emergency Severity Index (ESI) or START triage can also help improve the accuracy of triage assessment in the ER.

c. Implications for Emergency Department Services

The results of this study indicate that proper triage implementation can help improve the efficiency of emergency department (ED) services and reduce patient waiting times. Therefore, hospitals need to ensure that healthcare workers working in the ED have adequate competency in triage implementation.

Periodic evaluation of the triage system is also necessary to ensure that the triage process is running according to emergency service standards.

4. CONCLUSION AND SUGGESTIONS

a. Conclusion

Triage implementation and patient waiting times in the Emergency Department. Proper triage implementation can help expedite patient care and improve the efficiency of emergency department services.



**b. Suggestion**

- 1) Health workers need to improve their competence in implementing triage through regular training.
- 2) Hospitals need to conduct regular evaluations of the triage system in the ER.
- 3) Further research could analyze other factors that influence patient waiting times in the ER.

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Publish: Association of Indonesian Teachers and Lecturers

International Journal of Health Sciences (IJHS)Journal Homepage: <https://jurnal.agdosi.com/index.php/IJHS/index>

Volume 4 | Number 2 | June 2026 |



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