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Emergency Medicine Specialists' Knowledge of Hospital Emergency Department Indicators and Their Role in Patient Treatment: A Qualitative Study

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Abstract

Background: National indicators have been defined for the satisfaction and efficiency of emergency services and for evaluating their functionality. These indicators enlighten strengths and areas where improvements can help improve emergency ward quality.
Objectives: This study assessed the knowledge of medical specialists and their experiences, especially concerning the effects of these protocols.
Methods: This qualitative study was conducted in 2019 in the emergency departments of hospitals affiliated with the Iran University of Medical Sciences. During semi-structured interviews with 20 professors of emergency medicine in 2019, their experiences regarding the effects of these indicators on providing emergency services were evaluated. The data were collected until saturation. All interviews were recorded with the participant's permission and then transcribed verbatim and analyzed by content analysis method, and their semantic codes were extracted.
Results: By analyzing the interviews, 14 subcategories, and four main categories were obtained. Categories and subcategories consisted of providing services to patients (with three subcategories: Improving the quality of medical services, waiting time reduction, and increasing satisfaction), improving emergency efficiency and performance (with five subcategories: Improving conditions, services, communication improvement, resource management, and facilities and equipment), accreditation (with three subcategories: Performance improvement, management and planning, and service quality improvement), and proposed indicators (with three subcategories: Time, capacity, and resources).
Conclusions: The recognition of emergency medicine specialists in hospital emergencies is below average, which can affect the manner of providing health services and upgrading national indicators. With more and more familiarity of emergency medicine specialists with the indicators, a step can be taken to improve the status of hospital emergencies, thus determining patients' tasks faster, reducing the length of stay in the emergency department, increasing patient satisfaction, and improving the performance of the emergency department.

Keywords: Recognition, Specialists, Emergency Medicine, National Hospital Emergency Indicators

1. Background

As the entrance to the hospital, the emergency department annually admits approximately 30 million patients across Iran, and increasing its efficiency is essential for the Ministry of Health and Medical Education (MOH) (1). Evaluating and monitoring emergency performance is one of its most essential processes. Developing quantitative indicators and identifying a range of valid and meaningful indicators, such as measuring service time and reducing the waiting list and length of stay of patients in any emergency care, are the most critical activities of this process (2). To measure the performance of the hospital, including the emergency department, it is necessary to adjust the performance of indicators after reviewing the missions, strategies, and

goals of the hospital emergency department (3). Hospital indicators are the most critical indicators of hospital performance in various fields (4). Therefore, it is necessary to pay full attention to these indicators because by looking at the status of hospital indicators, the hospital's performance is clarified, and with more reflection on these indicators (5), its strengths and weaknesses are revealed (6). Indicators related to the emergency department also show its performance in various situations (7).

The number of health indicators is many, but few are evaluated properly. Thus, it is necessary to identify priority indicators and evaluate them (8). In 2010, for the first time, the national indicators of hospital emergencies, including priority indicators, which included five items, were selected and developed for assessment in the first stage and at the macro-level of the MOH, as follows:

- Percentage of patients assigned within six hours

- Percentage of patients discharged from the emergency department in less than 12 hours

- Percentage of unsuccessful cardiopulmonary resuscitation (CPR)

- Percentage of emergency patients leaving with personal responsibility

- The average duration of triage at each triage level (1).

In 2019, a new edition of hospital emergency indicators was handed to the hospital by the Ministry of Health (1). In this edition, the number of indicators had increased to 18. In general, the purpose of compiling the identification of priority indicators in the first stage and all indicators of the emergency department in the second stage was to achieve integrated performance indicators for emergency departments and clarify the strengths and weaknesses and plan for achieving the objective of these sectors, since the emergency team plays an influential role in promoting these indicators. The failure to recognize these indicators leads to inappropriate emergency department management.

2. Objectives

This study evaluated emergency medicine professionals' knowledge of hospital emergency indicators and their role in improving patients. The results can be used for health policy-makers in the field of information, education, integrated and knowledge-based management, and evidence-based and need-based policy-making.

3. Methods

3.1. Study Design

The present qualitative study was conducted from December 2018 to 2019 by qualitative content analysis using Graneheim's inductive content analysis method. The participants were selected purposefully among those with relevant knowledge in the field of research questions and willing to participate in the study.

3.2. Study Setting

This study was conducted at the Iran University of medical sciences with 10 educational and 18 clinical hospitals, 54 emergency medicine specialists, 29 emergency attendees, and 15 emergency medicine residents.

3.3. Data Gathering

In this phase, the study participants were 20 emergency medicine specialists and specialists who were selected and interviewed based on purposeful sampling. In this study, after obtaining consent from the participants and using the study guide, the following three basic questions were asked, and questions were added during the interviews. The interview guide was prepared using a review of the texts and comments of the research team members (Table 1):

Table 1. Emergency Medicine Professors' and Specialists' Demographics

Characteristics	Emergency Medicine Professors	Emergency Medicine Specialists
Age	42.52 ± 11.83	33.63 ± 4.71
Gender (%)		
Female	20	80
Male	45	55
Marital status (%)		
Married	60	35
Single	40	65
Work experience	11.37 ± 4.98	5.25 ± 2.34

- Considering your experience, what are the effects of national indicators on healthcare in hospital emergencies?
- With your experience, how can these indicators in the emergency department lead to patient satisfaction?
- What are the challenges of establishing these indicators in the hospital emergency department?

Interviews were conducted in person and face-to-face. The length of the interview was approximately 30 to 45 minutes. The interview started with the initial questions,

and then based on the participants' answers and disclosed details, more probing questions were asked to explain the current situation and enhance the interview.

3.4. Data Analysis

All interviews were recorded, and comments were noted. Audio files were listened to several times and categorized after each interview. This process continued until data saturation. The recorded interviews were analyzed by qualitative analysis, and the initial items were extracted.

3.5. Trustworthiness

Lincoln and Guba's indicators were used to analyze the acceptability of the data and findings of this study, including value and credibility, dependability, confirmability, and transferability. One of the methods for validating qualitative studies is the long-term involvement of the research team with the topic of research and the use of integrated methods. The validity of the findings can be verified according to the expertise and experience of researchers, continuous observation, and versatility of data and research conditions. In this study, researchers tried to use a combination of data sources (interviews and articles) and a combination of opinions of researchers (researchers and experts) to make the research credible. The research team provided several interviews for reliability. Attempts were also made to describe in detail how the research had been conducted so that other researchers have a clear understanding of the general stages of the research. Research auditing can also help verify data. Despite the limitations of qualitative studies in transferability, an attempt was made to attract maximum participation by observing the appropriate research environment and selecting participants.

4. Results

In the evaluated content in the present study, 704 primary codes were identified that, after being filtered, reached 276 codes. After analyzing the data, challenges and obstructions were categorized into four main categories and 14 subcategories.

Categories and subcategories consisted of providing services to patients (with three subcategories: Improving the quality of medical services, waiting time reduction, and increasing satisfaction), improving emergency efficiency and performance (with five subcategories: Improving conditions, services, communications improvement, resource management, and facilities and equipment), accreditation (with three subcategories: Performance improvement, management and planning, and service quality improvement), and proposed indicators (with three subcategories: Time, capacity, and resources) (Table 2).

4.1. Effects of Hospital Emergency Indicators on the Manner of Providing Health Care to Patients

4.1.1. Improving the Quality of Healthcare

"One of the effects of developing national emergency indicators is the provision of proper medical services due to the prioritization of patients based on urgency, timely treatment, and appropriate transfer of patients to other wards. Time-based triage of level 4 and 5 patients leads to rapid treatment and timely transfer to specialized wards and surgical operations, which significantly helps to reduce the mortality rates of critical patients in the emergency department." (Participant No. 7)

4.1.2. Reducing Waiting Time

Implementing functions by national emergency indicators, the treatment team must provide services in the least possible time. This current procedure in the emergency department will reduce patient waiting time and increase the speed of treatment.

"One of the most important results of practicing hospital emergency indicators is to reduce the length of time patients stay in the emergency room and to treat critically ill patients in an emergency, which will lead to a reduced waiting time and free space in the emergency department." (Participant No. 9)

4.2. Improving Emergency Processes

One of the objectives of implementing emergency indicators is to improve the rotation of patients in the emergency ward and upgrade this vital part of the hospital.

4.2.1. Improving the Condition of the Emergency Department

Reducing the visiting time and assigning patients has reduced the hospital's congestion, providing favorable results for the executive, planning, and management processes.

"The rapid assignment of patients, upon providing timely treatment to patients, creates the conditions for the admission of new patients and the appropriate workflow of the patient in the emergency department." (Participant No. 1)

4.2.2. Communication Improvement

One of the critical factors of the emergency department is communication, which is defined at different levels, including Communication within the ward, with patients, and with other wards. Better and more accurate communication will improve the workflow and management of the emergency department.

"One of the most important reasons for conflict between patients' companions and medical staff in the emergency department is patients' late assignments and visits. Acting on the hospital indicators will reduce these conflicts due to the reduction of patient visit time." (Participant No. 3)

4.2.3. Resource Management

The lack of resources in the emergency department has been one of the constant challenges of hospitals. Lack of timely assignment of patients leads to overcrowding in the emergency department and makes it challenging to provide services, leading to fatigue and exhaustion of staff in the department.

"We need to work as a team in the emergency department. Familiarity with the indicators of the emergency department will make things work faster, more accurately, and more empathetically, and increase the ability of teamwork in the department." (Participant No. 6)

4.3. Accreditation

4.3.1. Improving Processes

Clarification and establishment of national emergency indicators will improve the current processes of this ward in regular and critical times.

"I believe that actions based on policies in critical wards, especially in emergency wards, help to improve treatment and management processes." (Participant No. 6)

4.3.2. Management and Planning

One of the most critical functional infrastructures in the emergency department is management and planning in line with accreditation criteria.

"By reviewing the hospital's emergency indicators monthly, the condition of the ward is measured, and by the shortcomings and needs, an appropriate management plan can be designed and implemented. On the other hand, reducing the patient's stay in the emergency ward reduces the costs of this ward. "(Participant No. 2)

4.3.3. Services Quality

Considering the high number of patients referred to the emergency department and the existing challenges, compliance with national policies and indicators will increase the quality of medical services.

During the qualitative interviews, other indicators have been suggested for the management of the emergency department, the most important of which is the number of beds, the number of nurses, interns, and specialists in terms of the number of beds, admission space, and capacity, and patient discharge percentage per day.

5. Discussion

By analyzing the content of the interviews, 14 subcategories, and four main categories were obtained. Categories and subcategories consisted of providing services to patients (with three subcategories: Improving the quality of medical services, waiting time reduction, and increasing satisfaction), improving emergency efficiency and performance (with five subcategories: Improving conditions, services, communications improvement, resource management, and facilities and equipment), accreditation (with three subcategories: Performance improvement, management and planning, and service quality improvement), and proposed indicators (with three subcategories: time, capacity, and resources).

These days, various tools and methods are used to evaluate the performance of organizations, and if done correctly and continuously, it will improve the executive apparatus and performance and the efficiency and effectiveness of public and private sectors (9). One of the salient features of performance appraisal is that it has a quantitative aspect that converts the results and consequences of the appraisal into measurable values (10) and is a process that measures, evaluates, and judges' performance during specific periods (11). This study also showed the importance of establishing national emergency indicators in the hospital emergency department to improve services and patient satisfaction.

Like any other process, the performance appraisal process involves a set of objective activities and actions in a logical sequence and order. Each model and pattern that is chosen involves performing common steps. The second step after defining the goals is formulating indicators (12). This is one of the most critical steps because organizations determine the achievement of their goals and mission by determining their criteria and indicators (13). In most organizations, general indicators are defined, and a series of factors are considered to measure them (14).

The monthly evaluation of the emergency index at the hospital level, the quarterly evaluation at the relevant university, and the general evaluation by the Ministry of Health and Medical Education every six months show the importance of evaluating the efficiency of this critical department in the hospital. If a defective situation occurs, necessary and immediate interventions can be made. The emergency medicine specialist, as a leader, must be able to make the right decision and treatment for a large number of patients in a limited time (15). This study also showed that emergency medical professionals, as the leader of the hospital emergency department, should have complete information about national indicators to have integrated and effective management of the emergency department.

According to a study by Horwitz et al., prolonging the duration of emergency department visits while reducing the quality of care will lead to patient dissatisfaction. In Iran, the patient can be saved from death and disability with proper and timely care (16). It is essential that the emergency physician has extensive knowledge in all areas of medicine and can act as a guide for all professions, depending on the location, the availability of experience, and the presence or absence of regulatory agencies (17). This study found that the leading cause of patient dissatisfaction is the long waiting time and stay in the emergency department. Establishing national emergency indicators and defining processes based on these indicators can increase the quality of services and reduce the workload of the emergency department by reducing waiting time and increasing the speed of patient assignment.

A study by Halpern and Renaud proved that the emergency medicine system consists of hospital emergency departments, care centers, and dispatched emergency teams of emergency medical technicians, physicians, and other healthcare professionals (18). According to the study of Basir Ghafouri et al., the average length of stay of patients in the hospital emergency department was estimated to be 3 hours and 13 minutes with an indicator deviation of one hour and 52 minutes (19). The percentage of patients assigned within 6 hours is also one of the five leading indicators of an emergency, which emergency medicine specialists recognize as about 39.68%. This index is in the first place compared to other indicators. Familiarity with this index has decreased patients' average length of stay in the emergency department. This shows that the familiarity of medical professionals with national indicators will lead to their establishment in the emergency department and improve the performance and efficiency of this critical department in the hospital.

In the study of Maddineshat et al., conducted in 2015 in one of the hospitals of Hamedan, the average time of the primary visit by a general practitioner was 3.9 minutes, the assistant visit was 77.1 minutes, and the intern visit was 88.9 minutes. In the emergency department, it reduces the quality of care and increases adverse outcomes (20). On the contrary, with proper and timely care, the patient can be saved from certain death and disability (21). With time-wise treatment of patients by emergency medicine specialists, the waiting time and hospitalization of patients can be reduced, and the level of satisfaction can be increased.

The role of emergency medicine and management in reducing patients' waiting time and length of stay is a critical factor for patient satisfaction that reduces the risk of failure and increases the patient's willingness to pay costs and refer new patients (22). A study found that with timely diagnosis and treatment of patients by emergency medicine specialists (23), patients' waiting duration and hospitalization can be reduced, and the level of satisfaction can be increased (24). This study found that emergency medicine specialists should be familiar with their index and implementation process and ensure their implementation by the emergency team with proper management and planning. The reason is that precisely identifying indicators by emergency medicine specialists has a vital role in improving the state and functionality of the emergency ward.

5.1. Conclusions

The purpose of compiling national and all indicators of the emergency department is to achieve integrated performance indicators for emergency departments, clarify the strengths and weaknesses, and plan to achieve the goals of these departments in a specific way.

The results of this study provided a thorough understanding of the role of national indicators of hospital emergencies in improving patients and the quality of medical services and improving emergency conditions, identifying strengths and weaknesses, and providing a basis for planning to address weaknesses and improve them. Managers can benefit from the findings to improve the present situation.

Generally, experts' knowledge of the indicators was inappropriate, and they were naturally thinking of improving them. With more and more familiarity of emergency medicine specialists with the indicators, a step can be taken to improve the status of hospital emergencies, therefore determining patients' tasks faster, decreasing the length of stay in the emergency department, increasing patient satisfaction, and improving the performance of the emergency unit.

Compilation of educational programs to familiarize emergency medicine specialists with indicators, the

inclusion of national emergency indicators in the educational curriculum of medical students, complete and accurate information about indicators, and updated editions, including executive and operational solutions for improvement of the indicators, are in hospitals.

5.2. Study Limitations

The inability to interview some emergency medicine specialists was a limitation.

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Footnotes

Authors' Contribution: Study conception and design: GH. M and M. R; data collection: A. D, K. F, and SH. H; analysis and interpretation of results: A. D and K. F; drafting the manuscript: GH. M, A. D, M. R, and K. F. All authors reviewed the results and approved the final version of the manuscript.

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References

1. Janbabaee G. *National indicators of hospital emergency department Ministry of health and medical education 2019*. Iran: Health Med Edu; 2019.
2. Zohoor AR, Pilevar Zadeh M. Study of speed of offering services in emergency department at Kerman Bahonar hospital in 2000. *Razi J Med Sci*. 2003;**10**(35):413–9. Persian.
3. Weiss SJ, Derlet R, Arndahl J, Ernst AA, Richards J, Fernandez-Frackelton M, et al. Estimating the degree of emergency department overcrowding in academic medical centers: results of the National ED Overcrowding Study (NEDOCS). *Acad Emerg Med*. 2004;**11**(1):38–50. [PubMed ID: 14709427]. https://doi.org/10.1197/j.aem.2003.07.017.
4. Grossman MD. The role of emergency medicine physicians in trauma care in North America: evolution of a specialty. *Scand J Trauma Resusc Emerg Med*. 2009;**17**:37. [PubMed ID: 19698160]. [PubMed Central ID: PMC2741427]. https://doi.org/10.1186/1757-7241-17-37.
5. Kassaeian S, Gohari A, Masoumi G, Ghomian Z, Dehghani A. Post-hospital discharge strategy for COVID-19 treatment and control: Focus on fangcang hospitals. *Disaster Med Public Health Prep*. 2022;**16**(5):1795–7. [PubMed ID: 33766170]. [PubMed Central ID: PMC8193180]. https://doi.org/10.1017/dmp.2021.83.
6. Grossmann FF, Zumbrunn T, Frauchiger A, Delport K, Bingisser R, Nickel CH. At risk of undertriage? Testing the performance and accuracy of the emergency severity index in older emergency department patients. *Ann Emerg Med*. 2012;**60**(3):317–25 e3. [PubMed ID: 22401951]. https://doi.org/10.1016/j.annemergmed.2011.12.013.
7. El Sayed MJ. Measuring quality in emergency medical services: A review of clinical performance indicators. *Emerg Med Int*. 2012;**2012**:161630. [PubMed ID: 22046554]. [PubMed Central ID: PMC3196253]. https://doi.org/10.1155/2012/161630.
8. Baratloo A, Rahmati F, Forouzanfar MM, Hashemi B, Motamedi M, Safari S. Evaluation of performance indexes of emergency department. *J Emerg Med*. 2015;**2**(1):33–8. Persian.
9. Rahimi H, Khammar-nia M, Kavosi Z, Eslahi M. Indicators of hospital performance evaluation: A systematic review. *Int J Hosp Res*. 2014;**3**(4):199–208.
10. Sajadi HS, Sajadi ZS, Sajadi FA, Hadi M, Zahmatkesh M. The comparison of hospitals' performance indicators before and after the Iran's hospital care transformations plan. *J Educ Health Promot*. 2017;**6**:89. [PubMed ID: 29114557]. [PubMed Central ID: PMC5651664]. https://doi.org/10.4103/jehp.jehp_134_16.
11. Aaronson EL, Marsh RH, Guha M, Schuur JD, Rouhani SA. Emergency department quality and safety indicators in resource-limited settings: An environmental survey. *Int J Emerg Med*. 2015;**8**(1):39. [PubMed ID: 26520848]. [PubMed Central ID: PMC4628609]. https://doi.org/10.1186/s12245-015-0088-x.
12. Heyworth J. Emergency medicine-quality indicators: The United Kingdom perspective. *Acad Emerg Med*. 2011;**18**(12):1239–41. [PubMed ID: 22168185]. https://doi.org/10.1111/j.1553-2712.2011.01223.x.
13. Burkett E, Martin-Khan MG, Gray LC. Quality indicators in the care of older persons in the emergency department: A systematic review of the literature. *Australas J Ageing*. 2017;**36**(4):286–98. [PubMed ID: 28762246]. https://doi.org/10.1111/ajag.12451.
14. Hasandoost F, Ghanbari Khanghah A, Salamikohan K, Kazemnezhad Leili E, Norouzi Pareshkouh N. Prioritization of general clinical competence indicators from nurses' view employed in emergency wards. *J holist nurs midwifery*. 2015;**25**(4):53–63. Persian.
15. Jones P, Harper A, Wells S, Curtis E, Carswell P, Reid P, et al. Selection and validation of quality indicators for the Shorter Stays in Emergency Departments National Research Project. *Emerg Med Australas*. 2012;**24**(3):303–12. [PubMed ID: 22672171]. https://doi.org/10.1111/j.1742-6723.2012.01546.x.
16. Horwitz LI, Green J, Bradley EH. US emergency department performance on wait time and length of visit. *Ann Emerg Med*. 2010;**55**(2):133–41. [PubMed ID: 19796844]. [PubMed Central ID: PMC2830619]. https://doi.org/10.1016/j.annemergmed.2009.07.023.
17. Lee EK, Atallah HY, Wright MD, Post ET, Thomas C, Wu DT, et al. Transforming hospital emergency department workflow and patient care. *Interfaces*. 2015;**45**(1):58–82. https://doi.org/10.1287/inte.2014.0788.
18. Halpern MT, Renaud JM. *Adequacy of the supply and factors influencing potential shortages among emergency medical technicians and emergency medicine physicians*. Institute for Homeland Security Solutions; 2010.
19. Basir Ghafouri H, Hosseini Kasnavieh M, Sharifi MA, Amini M, Darzi Ramandi A. A survey of patients' length of stay and its effective predictors in emergency departments of TUMS selected hospitals. *Payavard Salamat*. 2017;**11**(3):18–26. Persian.
20. Maddineshat M, Roshanaei G, Azimi B, Niknam A. Assessing trauma patients' waiting time and its associated factors referred to an emergency department. *Payesh (Health Monitor)*. 2015;**14**(2):155–65. Persian.
21. Hand BN, Boan AD, Bradley CC, Charles JM, Carpenter LA. Emergency department utilization and monetary charges in adolescents with autism spectrum disorder, intellectual disability, and a population comparison group. *Autism Res*. 2019;**12**(7):1129–38. [PubMed ID: 31081200]. https://doi.org/10.1002/aur.2124.

22. Bullard MJ, Villa-Roel C, Guo X, Holroyd BR, Innes G, Schull MJ, et al. The role of a rapid assessment zone/pod on reducing overcrowding in emergency departments: A systematic review. *Emerg Med J*. 2012;**29**(5):372–8. [PubMed ID: 21515880]. https://doi.org/10.1136/emj.2010.103598.
23. Dehghani A, Ghomian Z, Rakhshanderou S, Khankeh H, Kavousi A. Components of Health System Preparedness in Disaster Risk Communication in Iran: A Qualitative Study. *Int J Disaster Risk Reduct*. 2022:103462. https://doi.org/10.2139/ssrn.4176137.
24. Abolfotouh MA, Al-Assiri MH, Alshahrani RT, Almutairi ZM, Hijazi RA, Alaskar AS. Predictors of patient satisfaction in an emergency care centre in central Saudi Arabia: A prospective study. *Emerg Med J*. 2017;**34**(1):27–33. [PubMed ID: 27480456]. [PubMed Central ID: PMC5256124]. https://doi.org/10.1136/emermed-2015-204954.

Table 2. Categories and Subcategories Related to the Knowledge of Emergency Medicine Specialists of National Indicators and Their Efficiency

Categories	Selected Codes
Providing Health Services to Patients	
Reducing waiting time	1. Prioritizing patients based on the urgency of treatment at an appropriate time
	2. Determining the condition of patients and their needs
	3. Performing the necessary diagnostic and therapeutic action by the emergency physician at the appropriate time
	4. Timely treatment of patients and proper transfer of patients to other specialized departments to continue treatment
	5. Preventing delays in hospitalization and performing the necessary medical measures such as surgery
	6. Reducing the mortality rate of critically ill patients in the emergency department
Improving the quality of treatment processes	1. Reducing patient waiting time
	2. Increasing the speed of patient treatment
	3. Reducing the length of time patients stay in the emergency room
	4. Faster treatment of various patients
	5. Faster treatment of critically ill patients in emergencies
	6. Reducing the time for patients to be admitted to the specific ward
Increasing satisfaction	1. Increasing the patient's mental peace
	2. Reducing the anxiety of the patient
	3. Decreasing patient satisfaction
	4. Overcoming the impatience caused by the long wait in the emergency department
	5. A sense of taking the patient seriously by therapists and staff
	6. Increasing patients' satisfaction with emergency services
	7. The desire of the patient and his companions to stay in the medical center until the end of treatment and discharge
Improving Emergency Processes	
Improving service conditions	1. Proper workflow of patients in the emergency department
	2. Reducing congestion in the emergency ward
	3. Reducing the workload of emergency personnel
	4. Increasing the possibility of accepting new patients
	5. Preventing disruption in emergency work
	6. Providing emergency forces and facilities for new patients
Communications improvement	1. Providing desirable and quality services based on patient needs
	2. Timely treatment of patients
	3. Transferring patients to other specialized wards to continue treatment
Resources management	1. Good communication between the emergency department and other departments for patient admission
	2. Establishing proper communication between the emergency department and the patient, his companion, and other members of the treatment team
	3. Re-visiting the patient to follow up and reducing potential risks to them and the doctor
Supply and equipment	1. Awareness of emergency personnel in managing the most acute conditions of patients referred to the emergency department
	2. Ability to do teamwork

	3. Comfort of emergency department staff
	4. Increasing staff satisfaction
	5. Reducing personnel stress
	6. Scientific, practical abilities and skills necessary to work in high-pressure conditions and make quick decisions
Improving processes	1. Actions based on policies
	2. Documenting important cases in the emergency
	3. Proper performance of the process of temporary hospitalization in the emergency room and transfer to other wards of the hospital
	4. Reducing the mortality rate of critically ill patients in the emergency department
Management and planning	1. Better patient management
	2. Identifying possible causes of failure in cardiopulmonary resuscitation
	3. Making the necessary plans to reduce the failure of cardiopulmonary resuscitation
	4. Reducing additional costs in the emergency
	5. Planning to increase the percentage of patients assigned under six hours
	6. Planning to increase the percentage of patients discharged under 12 hours
Service quality	1. Improving the quality management of the emergency department
	2. Increasing the quality of services
	3. Improving the quality of medical diagnoses
Suggested Indicators	
Time	1. Average length of stay in the emergency room
	2. The average total waiting time of patients
Capacity	1. Patient admission capacity per day
	2. Percentage of patient output per day
	3. Percentage of patients who are not admitted due to lack of beds
Sources	1. Number of nurses per patient
	2. Number of interns per patient
	3. The ratio of physical space to reception capacity
	4. Bed occupancy rate
	5. Ratio of facilities and equipment to reception capacity
	6. Bed rotation distance index