

*Original Article***Problems in the emergency department of Al-Zahra educational medical center, Isfahan**

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Abstract

BACKGROUND: Speed of giving services in medical centers, especially in emergency department, play an important role in reducing death and handicap. The action of emergency department can have a great effect on other wards actions.

METHODS: This triangulation study conducted in 2005 in three steps. In the first step, problems of the emergency department of Al-Zahra hospital were extracted using an open questionnaire filled by employed personnel. In the second step, 14 managers of the center attended a meeting discussing those problems. Based on the gathered data, a closed questionnaire was designed and in the third step it was given to 64 hospital employee. Data were analyzed using SPSS software.

RESULTS: In the first group (managers), 5 problems were scored more: security problem (70%), not paying attention to educational hierarchy (70%), absence of on-watch resident in the emergency department (60%), absence of a standard clinical protocol (60%), and absence of team work (38%). The second group (employed personnel of emergency department), gave more scores to nonscheduled transfers from other centers (70.6%), absence of on-watch resident in the emergency department (61.8%), not determining the correspondence attending for a multiple-trauma patient (58.9%), absence of team work (52.9%).

CONCLUSION: Emergency ward has increased the chance of living for patients receive urgent medical services, in the first hours after an accident or a disease attack, known as "golden time"; so absence of on-watch resident in the emergency department of educational hospital has a negative effect on making decisions and functioning and mostly.

KEY WORDS: Emergency department, hospital emergency services, triage, clinical protocol.

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In most of the countries, hospital emergency services have always been a problem in health care and medical system. According to authorities, every part of health care system, especially emergency services, is too costly; so they always try to cut the expenses in every field. Unfortunately, it seems that "healthy humans are main axis of constant development" has remain as a motto in our country; because of low medical per capita during years, people could not easily use public medical services. Besides being expensive, the quality of services has been lowered as well. These

problems eventually hurt people, physically and mentally, because they are the main costumers of medical and health care and emergency services. Regarding principal role of emergency wards in saving people's lives, it's considered as one of the main axis of hospitals. Every hospital must have an emergency ward equipped with needed staff, equipments and facilities. There must be skilled emergency physicians in the emergency department (ED) 24 hours a day, 7 days a week, and 365 days a year. Also the most skilled nurse personnel must work in this department. First hours after

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a trauma, especially for traffic accident or heart disease patients, consider as golden time.¹ Emergency room is one the most important wards in a hospital and fast providing medical care can reduce the rate of death and handicap. The performance of emergency department can have a great effect on other wards' performances² and quality of services and the manner of offering them can be a symbol of the hospital's condition. In other words, a well equipped and modern hospital without a qualified emergency department, would not be listed as a qualified hospital.³ Studying emergency departments performances in Tehran, Goodarzi showed that 44.4% of the departments does not have skilled staff and only 25.9% of them are standard and qualified for working as an emergency ward.⁴ It is expected from an emergency ward, especially in a hospital, to have qualified management and a systematic program to avoid possible problems like shortage of beds and overcrowding, besides saving lives in critical conditions and overcome routine and urgent problems. Each day, 1.5 to 3 patients refer for one bed in a public hospital, 10% of them suffer from an acute disease.⁵ Actually the most number and the most serious patients refer to the emergency ward of a hospital.⁶ Emergency services are one of the most important parts in treating acute diseases and since they can save lives, their value is undeniable. For multiple-trauma patients, fast actions have a special importance and any delay for any reason or any negligence from any of the staff could lead to patient's death or handicap.⁷ Also, time limitation, plenty of works, limitations of diagnostic actions, and choosing a treatment urgently are main characteristics of working in an emergency department. Al-Zahra educational and medical center is the biggest and most important emergency ward in Isfahan province. Some special problems in emergency department, such as staying of patients, emergency ward's area, patients' triage, and... made us to find its weaknesses using available information and statistics, so maybe they would be helpful in increasing the quality of services in this center.

Methods

This was a triangulation study, a study by using different methods for collecting data.⁸ This method has been defined as a combination of two or more theories, information sources, methods or researches in one study to reach a fact.⁹ Present study were conducted in 2005 in 3 steps to study problems of the emergency department of AL-Zahra educational and medical center, Isfahan, Iran. In the first step, problems of the emergency department were extracted using an open questionnaire filled by ward's employees chosen by multistage sampling method. In the second step, problems of emergency department were extracted by brain storming method in a meeting with experts and managers including:

- a) Center's managers (official, financial, educational and research headmasters and vice presidents)
- b) Emergency department educational and executive head masters, hospital's matron and supervisors.

Viewpoints of those who were present at the meeting were written on a board; then common points between both groups were merged and main questions were designed for the main questionnaire. Validity and reliability of the questionnaire were assessed using content validity and inter-relater methods, respectively. The questionnaire consisted of two parts, one for assessing demographic data and the other included 18 questions using 1-5 Likhert scale.

In the third step, the designed questionnaire was given to 50 medical personnel of the emergency department (nurse, assistance nurse, intern, resident and attending) chosen by simple sampling method and 14 executive managers. They were asked to give a score between 1 and 5 regarding the importance of the issue (1 is the least score for occurrence of the problem and 5 is the most score for occurrence of the problem). All of the executive managers took part in the study and no sampling was used for choosing them. The collected data were analyzed using SPSS software and descriptive statistics. The score of more than 50% were considered severe problematic.

Results

The personnel group consisted of nurses (60%), assistance nurses (12%), interns (14%), residents (2%), and attending (2%). The managers group consisted of attending (46%), head-nurses (14%), and supervisors (42%). In the first and second step, 18 issues were considered as problems of the emergency department of Al-Zahra hospital:

- Absence of team work
- Absence of a protocol on patient's rights
- Improper transportation of patients
- Improper physical area of the emergency department
- Absence of standard medical protocols in emergency department
- Undefined correspondence attending for a multiple-trauma patient
- Lack of equipments and medicine
- Disproportion between number of available beds and accepted patients
- Absence of on-watch resident in the hospital
- No welfare facilities for patient's companions
- Slowness of patient releasing process
- Lack of Emergency Medicine course
- Teaching rounds in the emergency department
- Considering educational hierarchy in the emergency department
- Nonscheduled transfers from other centers
- Weak security supervision in the emergency department
- Lack of triage for patients in the emergency department

Also in the third step results showed that manager's group gave most scores to five problems (Table 1).

Table 1. Emergency department's problem from manager's viewpoint

Problem	Percent
Security problem	70
Considering educational rates	70
Absence of on-watch resident in the hospital	60
Absence of standard medical protocol	60
Absence of team work	52.9

Other results showed that personnel's group gave most scores to 4 problems and others issues less scores (Table 2).

Table 2. Emergency department's problems from personnel's viewpoint

Problem	Percent
Unscheduled transfers from other medical centers	70.6
Absence of on-watch resident in the emergency department	61.8
Undefined correspondence attending for a multiple-trauma patient	58.9
Absence of team work	52.9

Discussion

In our study, security problems got the most scores in manager's group, since personnel's group gave most of their scores to unscheduled transfers from other centers; absence of on-watch resident in the hospital had a high score in both groups. These facts can show that emergency department is crowded 24 hours of the day. Crowdedness is an international crisis that can affect availability and quality of health care services¹⁰ in many countries like U.S., Australia, England, Spain, Taiwan, etc.^{9,11,12} 91% of emergency departments have reported it as their main problem.¹³ Other studies showed that overcrowding in emergency department can be complicated by various factors inside and outside of the emergency department and hospital including shortage of beds for patients, shortage of nursing staff, acuteness of patient's symptoms and problems in the emergency department, referring non-emergency patients to the emergency department, etc.^{8,14} Studies showed that 42-55% of referrals to the emergency department are not urgent.^{7,11} In Canada, for each 1000 patient, only 1 bed is available in the emergency department and lack of bed is the main reason for overcrowding.¹² The mean number of referrals to the emergency department of Al-Zahra hospital was 71 patients in each shift of a day; from those, 55.1% were admitted individually and 44.9% were transferred from other centers; 44.3% of them would be hospitalized and others (55.7%) were outpatients.¹⁵ So, a non-urgent outpatient would wait a while until other urgent cases are being managed. Disproportion between accepting patients and number of beds can make crowdedness more severe. Also it is recommended that only 85% of beds should be occupied¹⁶ but this num-

ber is 100% for Al-Zahra hospital. One of the reasons of crowdedness is that patients would not be transferred to other wards.¹¹ Al-Zahra hospital is a hospital of level-4 with high quality clinical and paraclinical equipments and results showed that lack of equipments was not mentioned as a problem in both groups. In a study on 2000 hospitals, the most crowded hospitals were in megalopolises which have a high population growth rate;¹¹ Al-Zahra hospital can be considered one of these hospitals. Personnel of the hospital considered unscheduled transfers from other centers as an important problem. Physicians Association of Canada reported that one of the main reasons for crowdedness of emergency departments in that country is "access block" condition. It means that rural areas should transfer their patients to cities because they do not have enough equipment for operating secondary and tertiary care.¹² Al-Zahra hospital is a referral hospital and this has been mentioned as a main problem.

In the present study, absence of the on-watch resident in the emergency department, undefined correspondence attending for a multiple-trauma patient, and absence of team work gained high scores in both groups. Since most of the emergency departments of the country do not have an expert emergency physician, it is necessary to have on-watch residents from different experts to develop emergency department functioning.

Also, considering the medical hierarchy can linger treatment process; because this means more than one person should visit the patient and decide about the treatment. Absence of a standard medical protocol can lead to problems and make people to act based on their own

knowledge; but a guideline for medical team is necessary and make the whole team work the same. Also results showed that if a particular attending would not be assigned as correspondence for a multiple-trauma patient, each team-work based on their specialty and this can linger treatment procedure. It can also linger time of bed occupation in the emergency departments which leads to overcrowding. It must be considered that overcrowding is related to pre-hospital, hospital and post-hospital care and basic programming is needed for solving this problem.¹⁷ The correct approaches to solving these problems are recommended to enhance emergency hospital services:

- Educating triage nurses and recruitment them in emergency departments
- Providing medical services in the emergency departments by specialized physicians in emergency medicine
- Design a protocol for treating a multiple-trauma patient
- Building round-the-clock clinics near referral hospitals and refer non-urgent patients to these clinics
- Increase acute care bed capacity and increase bed flexibility¹⁸ provide inpatient beds Transferring patients to other wards as soon as possible
- Expand the supply of qualified emergency nurses
- Providing nursing staff
- Develop and strengthening general hospitals.¹⁸

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