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The result of requesting C.C.U. Bed by hospital Emergency ward from the Emergency Medical Services (EMS) in Shiraz university of Medical Sciences in year 2003

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ABSTRACT

Inter Hospital transport is one of the most important parts in Emergency Systems. Aim of this study is to determine the result of requesting C.C.U bed from EMS in the year 2003
Methods: In a sectional study, the records of 2688 patients who go to Shiraz hospital Emergency wards and requesting C.C.U beds from EMS were examined. These patients were divided into 2 groups: Those who are successful in getting the bed in other hospitals and those who are not.
Findings: 68.5% of these cases were successful. There is a close relationship between using logistic regression, recognition hospital and being successful.
Conclusion: Increasing the C.C.U beds and providing the necessary equipment in these wards are the most important factors that should have priority in Shiraz.

INTRODUCTION

Inter hospital transport is one of the most important parts in Emergency systems in each country. So much so that most of the developed countries in the world have a practical definitive protocol for this matter. (1&2)

Unfortunately in Iran we do not have such a system . The patient goes to hospital, for

primary treatment , and if the patient needs to be confined to bed, then other events can occur, which may be harmful to the patient's health.

Emergency Medical Services of Shiraz University of Medical Sciences has been established in Shiraz with the help of remedy system management.

This department (section) coordinates the inter hospital free beds. When the hospital declines a bed , this section start to look for a free bed in other hospitals , governmental centers ,charity institutions and social and private services. When its search is finished and it finds a free bed, it notifies the relevant hospital to transport the patient to this new locale . This provides a service to the hospital, overcoming many difficulties as EMS cannot work well without this service of finding C.C.U free beds.

For solving the possible problems and seeing the effectiveness of the plan, they practice the drill. (3, 4 &5)

MATERIALS AND METHODS:

A sectional study has been done on those patients who came to hospitals and needed to be confined to bed in C.C.U wards which EMS found for them The Shiraz. Records of 2688 patients were reviewed and information gathered by looking at the questionnaires that had been completed by Emergency supervisors in EMS.

This information was reviewed and analyzed. 1510 patients (56.2%) were men , and all more than 2 years of age. You can see the absolute and relative frequency distribution of requested hospitals on the table 1.

Among these cases , 587 cases (21.8%) were transported to other centers and confined to bed in spring , 658 cases (25.5%) in summer ,791 cases(29.4%) in autumnl and 652 cases (24.3%) in winter . With other definitions , patients were confined to bed in the same hospital that they came to its emergency ward , died , released or cancel their admissions for any reason.

The relationship of sex, season, days of a week, and place of patient's residence, work rotation, recognition of C.H.F and MI, I.H.D in requested hospital with related factors were reviewed and analyzed by using a logistic regression model.

The effect of independent factors that have a significant statistical relation with related factors (1% or less) were reviewed and analyzed too.

Table 1: Relative & absolute frequency distribution of recorded cases according to requested hospital

Hospital	Number	Percent
Namazi	623	23.2
Faghihi	943	35.1
Hafez	173	6.4
Chamran	189	7
Ghalb al Zahra	240	8.9
Zienabiyeh	340	12.6
Etc.	180	6.7
total	2688	100

FINDINGS

1840 cases were successful and they were accepted by other hospitals.

Table 2: Relative & absolute frequency distribution of recorded cases according to the result of request

Hospital	Number	Percent
Accepted in other hospital	1840	68.5
Accepted in the same hospital	308	11.5
Died	29	1.1
Released	352	13.1
Canceled the admission for any reason	159	5.9

Table 3: Relative & absolute frequency distribution of successful acceptance according to different factors

Sex	Variable	Percent of success	P.V
	Male	68.4	0/9
	Female	68.5	
Season	Spring	66.4	<0/0001
	Summer	74.3	
	Fall	69.5	
	Winter	63	
Days of a week	Saturday to Wednesday	69.3	0/17
	Thursday	68.5	
	Friday	64.5	
Place of residence	Shiraz city	68.3	<0/0001
	Fars province	70.6	
	Morning	71.5	
Work rotation	Noon	72.7	<0/0001
	Evening & night	63.2	
Recognition	MI,IHD	70.8	<0/0001
	CHF, pulmonary edema	52.6	
Requested hospital	Namazi	74	<0/0001
	Faghihi	71.3	
	Hafez	77.8	
	Chamran	67.1	
	Ghalb-e- alzahra	53.2	
	Etc.	74.4	

2346 Cases (78.3%) were accepted for MI and I.H.D. and 342 cases (12.7%) were accepted for pulmonary edema and cardiac arrest.

The average time from the beginning to the end was 229 minutes. Minimum time was 1 minute and maximum time was 8040 minutes and average was 120 minutes. (SD=360)

The number of hospitals that were called for acceptance were at least 5.8, at most 40 and the average was 3(SD=6.6)

The relation of different factors with the rate (degree) of success was shown in table 3. By looking at this table you will see a significant relationship between season, work rotation, recognition, type of requested hospital and success in acceptance. By using a logistic regression we gain a multi variable equation that you can see its result on table 4.

Table 4: gained outcomes in accordance with logistic regression model

Variable in the model	B	SE	Wald	Sig	Exp(B)
			31/9	0/000	
Spring	0/26	0/12	4/4	0/037	1/3
Summer	0/96	0/13	30/4	0/000	2/0
Fall	0/40	0/12	11/9	0/001	1/5
Work rotation			20/4		
Morning	0/36	0/11	11/3	0/001	1/4
Noon	0/43	0/10	16/7	0/000	1/5
Recognition of MI, IHD	0/73	0/12	35/3	0/000	2/1
Requested hospital			74/3		
Namazi	0/07	0/20	0/1	0/7	1/1
Faghihi	0/09-	0/19	0/2	0/6	0/9
Hafez	0/95-	0/24	16/2	0/000	0/4
Chamran	0/20	0/25	0/7	0/4	1/2
Ghalb-e- al Zahra	0/12-	0/23	0/3	0/6	0/9
Zeinabiyeh	0/85-	0/21	16/8	0/000	0/4
Fixed number	0/21-	0/23	0/8	0/4	0/8

In this table you can see that season, shift and recognition factors have a close relation with success and this relation can be seen in Hafez & Zeinabiyeh hospitals.

Comparison of seasons shows that the probability of acceptance is not the same in different seasons. Spring, Summer and Autumn have more acceptance than Winter. These probabilities are 3% in spring, 5.1% in Summer and 1.2 % in Autumn.

Comparison of work rotation shows that acceptance is more in morning and noon shifts. Evening and night shifts has fewer acceptances. Rate of increase in acceptance in morning /noon shifts are sequentially: 1.4 & 1.5 times more than evening and night shifts.

The probability of I.H.D and MI acceptance is 2.1 times more than pulmonary edemas and cardiac arrest among mentioned hospitals just Hafez and Zeinabiyeh hospitals have less probability to accept such cases.

DISCUSSION

Inter hospital transport is one of the most important aspects in Medical Emergency Services in each country.

Emergency center, in international standards, is a place that get acceptance for all the patients who come to hospitals with prehospital emergency helps and those patients who transport from one hospital to another (1&2).

Most countries have the immediate and necessary information about free beds in all hospitals and they can, in critical events, transport the patient that its bed is gotten before. (1)

As you see in the result of this research, we still have problems with the rate of C.C.U bed acceptance. Although so many activities have been done for establishing C.C.U wards in Tehran and other cities, the rate of acceptance is 68.5 % and in about 31.5% of other patients we still have problem.

It seems that the main problem in C.C.U wards is human power, equipment, physical situation and budget (Money). And as you know the last mentioned factor (budget) is very important.

There is no justification for significant relation between success in rate of C.C.U acceptance and seasons.

Maybe because our hospitals are training hospitals or because of epidemiological factors, our C.C.U beds are more occupied in Summer than other seasons.

More studying should be done to find a logic relationship between season and rate of acceptance.

At last based on findings we have some suggestions:
- Increase the number of C.C.U beds in Shiraz
- Develop the facilities in those hospitals that have C.C.U beds.
- Centralized the emergency acceptance in Shiraz emergency center with emergency automation. So that the patient will not keep in emergency wards for long time.
- Increase the Emergency personnel and equipments.

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