Inappropriate Utilization of Emergency Medical Services at Prince Ali Military Hospital

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ABSTRACT

Objective: To study the demographic characteristics of patients attending the emergency department and study the factors associated with inappropriate use of emergency department.

Methods: A total of 4,950 patients' charts who attended the accident and emergency department of Prince Ali Military Hospital in the 1st (8 am- 4 pm) and 2nd shifts (4 pm-10 pm) from the 1st to 31st of March 2008 were reviewed. A sample of 495 patients was randomly selected through systemic sampling method. A specially designed medical record abstract form was used to collect data related to inappropriate use and misuse of the emergency medical services in the hospital. Simple descriptive statistics were used to describe the relevant study variables.

Results: Out 495 patients 38 (7.7%) were admitted to different hospital wards. Of these patients 309 were males and 186 were females. Eleven (2.2%) cases were classified as life threatening cases, 58 (32%) as urgent cases and 326 (65.8%) were non urgent cases. Only 99 (20%) cases were having their complaints 24 hours prior to presentation.

Conclusion: Large numbers of attendees were non urgent cases. To overcome this managerial problem, there is a need to utilize the primary health care/walk-in clinics served by family or general practitioners who provide primary health care services. In addition there is a need to promote public health education through community involvement.

Key words: Accident and Emergency Department, Inappropriate use

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Introduction

Critical care begins immediately upon recognition of the critically ill patients through the triage system applied in the emergency department (ED). The inappropriate use of the ED makes it difficult to guarantee access for those real emergency cases and decreases the readiness for care. Also it produces negative spillover effects on the quality of the emergency services.(1) Overcrowding and inappropriate use of ED were described in many studies. It is an international health problem affecting countries and specialized health care and extensive primary care networks.(2) According to the literature patients who inappropriately seek emergency services are mainly young, the majority are females and not referred to ED by health professionals.(1, 3-5)

In addition, several factors may lead patients to choose emergency services instead of primary and specialized health services: (1) the desire to receive care on the same day, (2) the possibility of being

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attended to in a setting where it is possible to do laboratory and other investigations, (3) the belief that ED services are able to solve these health problems.[1,6] However, patients frequently underestimate the importance of continuous care, and they often lack the knowledge that their decision to seek ED services may result in the excessive use of medications and unnecessary diagnostic tests.[1,7]

The non-urgent cases usually attend in the early morning and late evening and during weekends. In Jordan there is no literature review about the inappropriate use of ED in the public sector, but in the few studies we reviewed some authors reported that large groups of attendees are non-urgent cases.[8,9]

Methods

A total of 4,950 patients attended the emergency department at Prince Ali - Military Hospital in Karak city, South of Jordan, during the two working periods of 8 am to 4 pm (1st shift) and 4 pm and 10 pm (2nd shift) from the 1st to the 31st of March 2008. Four hundred and ninety-five patients were randomly selected through systemic sampling method (one in ten).

A specially designed medical record abstract form was used to collect data related to inappropriate use and misuse of the emergency medical services in the hospital.

The urgency of the presenting complaint was defined according to the Hospital Urgency Appropriateness Protocol (HUAP), a previously-developed standardized and validated set of criteria.[1] The criteria of severity were categorized as follows: Life threatening cases included patients with one of the following conditions (sudden or very recent onset): (a) loss of consciousness; (b) disorientation; (c) coma; (d) sensory loss; (e) sudden loss of sight or hearing. Urgent cases included patients with one of the following conditions: (a) pulse rate alteration – <50 or >140 bpm; (b) arrhythmia; (c) blood pressure alteration; (d) electrolyte or blood gas alterations (not including patients with chronic alterations of these parameters, such as: chronic kidney failure, chronic respiratory disease, etc); (e) persistent fever – 5 days or more, not controlled after treatment in primary care; (f) active hemorrhage; (g) sudden loss of functional capacity of any part of the body; (h) road traffic accidents; (i) chest pain and acute abdominal pain.

Cases which did not fulfill the previous criteria were considered as non-urgent. Simple descriptive statistics were used to describe the relevant study variables.

Results

Table I shows the demographic characteristics of the study group. About two-thirds were males, and 42% were in the middle age group. Seventy-two percent of those attending the ED received medications and 7.7% were admitted to the different hospital wards, 20% of the attendees who had normal physical examination and laboratory and radiological investigations were reassured and discharged. About 60% attended the 2nd shift and 29% came to the ED 1-3 days after the onset of symptoms and 51% came three days after the onset of symptoms, 99 (20%) cases attended within the first 24 hour after the onset of their symptoms as demonstrated in Table II.

The commonest presenting conditions were respiratory complaints, cardiovascular and post trauma; 25.9%, 11.7%, and 10.3% respectively (see Table III). Table IV presents the degree of urgency among attendees of the ED. Non-urgent cases constituted about two-third of the study population.

Discussion

Patients are generally not medically trained and may experience difficulty in ascertaining the severity of their own condition and do not know were to go first.[10] Patients were described as inappropriate because their conditions are neither serious nor urgent. However, they attend and continue to attend the ED in significant numbers. There is no accepted practical definition of what constitutes an appropriate reason to present as an emergency case. Figures from 6 to 80% are given for an inappropriate attendance.[11]

The results of this study indicate a significant prevalence of misuse and abuse of ED in our hospital (65.8%). Hani *et al.* reported 70.8% in his study, to have non-urgent cases.[8] These figures were found to be higher than those reported by Buesching *et al.*, who found that only 10.8% of the study group were inappropriate visitors.[12] Another study done in Canada by Afilalo *et al.* reported 15% of their study group were misusing the ED.[13] In Spain, Oterino *et al.* reported that 26.8% of their study group were inappropriate users,[14] which is comparable to other developed countries. The wide variation in the appropriateness of the use of ED in developing and developed countries can be explained by the use of different criteria for

Table I. Demographic characteristics of the study population

Characteristics	No	%
Gender		
Male	309	62.4
Female	186	37.6
Age group		
15 to 25 years	136	27.4
26 to 50 years	200	42
51 to 75 years	132	26.6
> 75 years	021	4

Table II. Type of management, time of visit, and duration of symptoms among the study group

Characteristics	No	%
Admission	38	7.7
Time of visit (shift)		
1st shift	199	40
2nd shift	296	60
Duration of symptoms		
< 24 hours	99	20
1-3 days	144	29
>3 days	252	51

Table III. Common presenting conditions among the study group

Presenting condition	Number	%
Respiratory	128	25.9
Cardiovascular	58	11.7
Trauma	51	10.3
Gastro intestinal Tract	37	7.5
Neurology	22	4.4
Endocrine	21	4.2
Orthopedic	27	5.5
Urology & nephrology	37	7.5
ENT	38	7.7
Ophthalmology	5	1
Skin & soft tissue	11	2.2
Others	60	12
Total	495	100

Table IV. Degree of urgency

Degree of urgency	Number	%
Life threatening	11	202
Urgent	158	32
Non urgent	326	65.8
Total	495	100

classification of emergency cases in addition to the presence of triage system in those countries encouraging more of these cases to attend primary health care system in those hospitals. This diminishes the pressure on EDs.

Coleman *et al.* conducted his study in 2001 in Sheffield, England and reported that 55% of the health problems presented by non-urgent populations attending ED are suitable for treatment in either general practice or walk in centers.[15] In addition, factors affecting this increasing number of inappropriate attendees may be caused by easy accessibility to the emergency department, and the waiting time in this department is shorter compared with other clinics.

The majority of cases were having respiratory system problems (26%), which can be expected during the month (March) of our study. This supports the fact that in this month we have more allergic cases and upper respiratory tract infections and acute cases of bronchial asthma. Other studies in Jordan were done by Atallah *et al.* in 2001. He reported that cardiovascular emergencies were the majority of cases.[9] The second shift was more crowded. This may be justified by the unavailability of the walk-in clinics at his hospital during this time.

Coleman *et al.* champions replacing the triage process with a "see & treat" approach to patient care in ED, but the continued survival of the stereo type at the "inappropriate attendee" can be an obstacle to the implementation of this new way of working.[16] The increasing availability of alternative services offering first contact care for non-urgent health problems, is likely to have some impact on the demand for accident and emergency services.[15] Albert *et al.* conducted a study in Hong Kong and found that the gold standard in differentiating true emergency cases and general practitioner cases was based on a retrospective record review conducted independently by a panel of emergency physicians.[17] Appropriateness must be considered in light of a legitimate role for ED in primary care and the balance of resources between primary care and emergency medicine in local settings.[18]

Limitation of this Study

1. Small number of the sample
2. The lack of follow-up of the study group to

determine if any of the non-urgent cases were admitted to the hospital or received out-patient medications or procedures within 24 hours of the emergency department visit.

Conclusion

Large number of attendees were non-urgent cases. To overcome this managerial problem, there is a need to utilize the primary health care clinics and walk-in clinics served by family or general practitioners. Refining the triaging system by well-trained experienced nurses may also minimize the inappropriate use of the ED. Promoting public health education using radio and television programs, and through community involvement would also be beneficial. Inappropriate attendees to the ED may also be minimized by requesting a nominal fee for any unnecessary investigations requested by patients.

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