

# Emergency Department Nonurgent Visits in Iran: Prevalence and Associated Factors

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**E**mergency departments (EDs) across the world have turned into a safety net for healthcare systems. Therefore, the number of people presenting to an ED has been increasing worldwide. As a result, overcrowding has been a major concern of healthcare administrators for the past 3 decades.<sup>1</sup>

According to published statistics, the overall ED utilization in the United States increased from 93.4 million to 110.2 million visits from 1994 through 2004. That is an increase of more than 1.5 million visits annually.<sup>2</sup>

Not all visits to the EDs are for urgent problems.<sup>3</sup> In fact, as EDs are supposed to provide care to all people requesting their service, patients with nonurgent problems make up a substantive proportion of those visiting the ED. Utilization of ED services by patients with nonurgent health problems has frequently been referred to as “inappropriate” in the literature and constitutes a worldwide problem.<sup>4,5</sup> As patients’ and physicians’ perspectives on the appropriateness of the visit vary considerably, it is fundamentally difficult to assign this attribute to an ED visit. However, EDs are generally regarded as sources of care for patients with emergent and urgent problems; therefore, most definitions of the appropriateness of the ED use are based on urgency<sup>6-8</sup> and nonurgent visits may intuitively be considered as inappropriate.

Although estimates of the magnitude of the problem vary among different studies, according to the data published in 2006 in the United States 12.5% of ED visits were classified as nonurgent.<sup>2</sup> Other studies have noted that 16% of the patients visit the ED as “a regular source of care”<sup>9</sup> and as “a substitute for a general practitioner to treat minor or unexpected illnesses.”<sup>10</sup> Studies in the pediatric population have gone even further and noted that between one-third and one-half of the visits to the ED are for nonurgent conditions.<sup>11,12</sup>

In Iran, national laws ensure access to emergency care. ED staff are supposed to screen all people who present, regardless of their ability to pay or their insurance status. EDs are not allowed to withhold their services from any patient on the basis of their problem being nonurgent.

Nonurgent ED use may adversely affect the quality of emergency services and contribute to overcrowding. Overcrowding may lead to prolonged patient wait time and delay in diagnosis and treatment of seriously ill patients, potentially increasing the risk of poor outcomes and patient dissatisfac-

**Objectives:** To estimate the number of emergency department (ED) visits due to nonurgent problems and to describe the characteristics of those patients, as well as their reasons for presenting to the ED.

**Study Design:** Descriptive cross-sectional study.

**Methods:** In this study, all adult (aged >15 years) patients presenting to the ED over a 2-week period were evaluated. Data regarding the age, sex, marital status, educational level, and insurance status of all patients were recorded. The time and date of the presentation were also noted. Those classified by the triage nurse as having nonurgent conditions were surveyed regarding their reasons for presenting to the ED.

**Results:** Out of 1923 visits, 400 (20.8%) were classified as nonurgent. The prevalence of inappropriate ED visits was slightly greater in patients aged 15 to 49 years. Patients whose visits were paid for by health insurance accounted for the majority of inappropriate visits (82.75%). There were higher rates of inappropriate visits in the evening and night shifts compared with morning and afternoon shifts (17.39% vs 25.03%). The most common reason for presenting to the ED was “to obtain rapid treatment” (76.5%); only 10.75% presented because of a perceived urgent problem.

**Conclusions:** The results of our study corroborate the previous findings that inappropriate use of the ED is common. The prevalence of presentation for nonurgent problems was substantive between 6 PM and 6 AM. Gender, marital status, education, insurance, and day of the week had no association with nonurgent presentation.

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### Take-Away Points

Little is known about the appropriateness of the utilization of the services in emergency departments (EDs) in Iran. This prospective observational study evaluated the characteristics of all patients over age 15 years presenting to the ED over a 2-week period.

- The prevalence of inappropriate ED visits was 20.8%.
- The most common reason for patients with nonurgent conditions to visit the ED was “to obtain rapid treatment” (76.5%); only 10.75% presented because of a perceived urgent problem.
- Effective approaches and interventions are needed to address the inappropriate use of ED resources in Iran.

tion.<sup>13,14</sup> Nonurgent ED use can be frustrating for ED staff who consider this use as unproductive because they are providing nonurgent care available in lower acuity settings.<sup>15,16</sup>

Several studies have addressed the reasons why patients use the ED for nonurgent problems.<sup>17-21</sup> A multitude of factors have been suggested as reasons why patients choose to visit the ED instead of primary or specialty health services. These include “their desire to receive care on the same day,”<sup>4,5</sup> the possibility of “being attended to in a setting where it is possible to do laboratory and other tests,”<sup>5,22</sup> and the belief that the ED provides a better quality of service for complicated health problems.<sup>23</sup>

There have also been several attempts to identify populations with a higher prevalence of nonurgent ED utilization. Young age,<sup>10,24</sup> female sex,<sup>10,25</sup> homelessness, and lack of health insurance<sup>26</sup> have been suggested in different studies to be associated with nonurgent ED visits.

Despite the publication of numerous studies, the prevalence of and reasons for choosing the ED instead of primary care for nonurgent medical complaints are not fully understood. To the best of our knowledge, few published studies from Asia have addressed the prevalence of ED visits for nonurgent problems and patients’ reasons for making these visits. Finding the answers to these questions might provide some cost savings<sup>27</sup> for the healthcare system and might also help reduce the problem of ED overcrowding.

We designed this study with 2 objectives. The first objective was to estimate the number of ED visits in our institution that were due to nonurgent problems and to describe the characteristics of those patients. The second objective was to determine the reasons for nonurgent use of our ED.

## METHODS

### Study Design

To determine how many visits in our hospital ED were for nonurgent problems, we conducted a descriptive cross-sectional study of all consecutive adult patients (>15 years old) visiting the ED of our institution in a 2-week period in December 2009. The University Research and Ethics Committee

approved the research protocol. This committee is in compliance with the Helsinki Declaration. Patients were aware that they were being enrolled into a study and that participation was voluntary and confidential, but informed written consent was not obtained.

### Study Setting and Population

Our institution is a 700-bed tertiary-care teaching hospital (occupancy rate >90%) with an emergency medicine residency training program. The hospital is located in the capital city of Tehran and offers 24-hour emergency care. It serves a patient population mixed in demographic(s), income, education levels, and health status that includes a large number of people who are referred from neighboring towns. The ED has an annual census of about 40,000 visits. As per department protocol, all arriving patients are seen by the triage nurse and assigned a Canadian Triage and Acuity Scale level.

Because characteristics of the patients had the potential to vary based on the day of the week and the time of day, a schedule was prepared so that weekday, weekend, daytime, and evening shifts were sampled in 6-hour blocks. Overall, 56 blocks were studied in 14 days. It should be mentioned that there is no comprehensive and uniform health insurance plan in Iran. There are 4 basic types of health insurance organizations in Iran: the Social Security Organization, the Medical Service Insurance Organization, the Emdade-Emam Committee for socioeconomically disadvantaged people, and the Military Personal Insurance Organization.<sup>28</sup> Several complementary health insurance plans also exist. Although some patients may have basic and complementary insurance, many patients do not have any insurance.

### Study Protocol

To examine the characteristics of the patients who utilize our ED services, all demographic information including age, sex, marital status, educational level, and insurance status of all patients aged 15 years or older presenting to the ED during the study period was collected from the ED medical records. The time and date of the presentation for all patients were recorded as well. Individuals who returned more than once during the study period were included only once.

To identify the patients who utilize our ED for less urgent reasons, all patients who were categorized by triage nurse as acuity level either IV or V were approached and asked to participate in the survey. The interviewers recorded the patient’s name on a separate form coded to the questionnaire number, answered any questions, and completed the questionnaires.

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Data not recorded on the data form were collected by chart review or by a telephone call to the patient. Patients who refused to be interviewed after up to 3 attempts were classified as refusals. Individuals were excluded if they were brought to the ED by the police for forensic medical exams. When patients could not be interviewed because of their health status, their relatives were asked to provide the necessary information.

The interviews were carried out by 3 trained interviewers (1 during each shift), who were briefed about the objectives of the study but were not involved in the care of the patients. The field work was supervised by the lead author. The variables were coded by the interviewers, and the research coordinator reviewed each collected field.

All emergency medicine residents and attending physicians in our department were informed about the study, and the survey was pilot-tested for 24 hours prior to the actual data collection in order to ensure that data collection and recording proceeded smoothly. The data from this pilot study, however, were not used in the final statistical analysis.

### Measurements

The survey instrument consisted of a 1-page questionnaire. The questionnaire had 4 parts: characteristics of the visit such as date, time, day of the week, and the person (patient or his or her relative) who was interviewed; characteristics of the patient such as age, sex, marital status, health insurance, level of education, and the frequency of presentation to the ED; the chief complaint or reason for which the patient sought medical attention; and the main reason for coming to the ED on this occasion. These variables were chosen based on literature review and the authors' experience.

### Data Analysis

Data were entered into a Microsoft Excel database and were analyzed using descriptive statistics, which included calculation of prevalence, means, and standard deviations of all variables. Crude associations were evaluated by the  $\chi^2$  test. The level of significance for the analyses was set at  $P < .05$ . Data were analyzed using SPSS 14.0 software (SPSS Inc, Chicago, Illinois).

## RESULTS

During the 2-week study period, there were 2114 ED visits, with 11 individuals returning more than once. Among the remaining 2103 patients, 5.6% ( $n = 117$ ) were excluded from the study (115 patients  $< 15$  years old and 2 patients brought by the police) and 3.2% of the eligible subjects ( $n = 63$ ) refused to participate in the study, resulting in a final sample of 1923 patients.

Data forms were completed for 91% of total visits (1923 patients) during the study period (Figure). There were no unusual events during this period that would change the number or the type of ED visits.

The mean age of patients was 34.73 years (standard deviation 11.36 years; range 15-100 years); 62.2% ( $n = 1196$ ) of the patients were male and 37.8% ( $n = 727$ ) were female. With respect to marital status, 54.7% of patients were married and 45.3% were single, widowed, or divorced. Only 10.1% of patients had a college education, and 4.1% ( $n = 78$ ) were illiterate. The majority of the patients (85.8%) had an educational level of 12 years (high school diploma) or less.

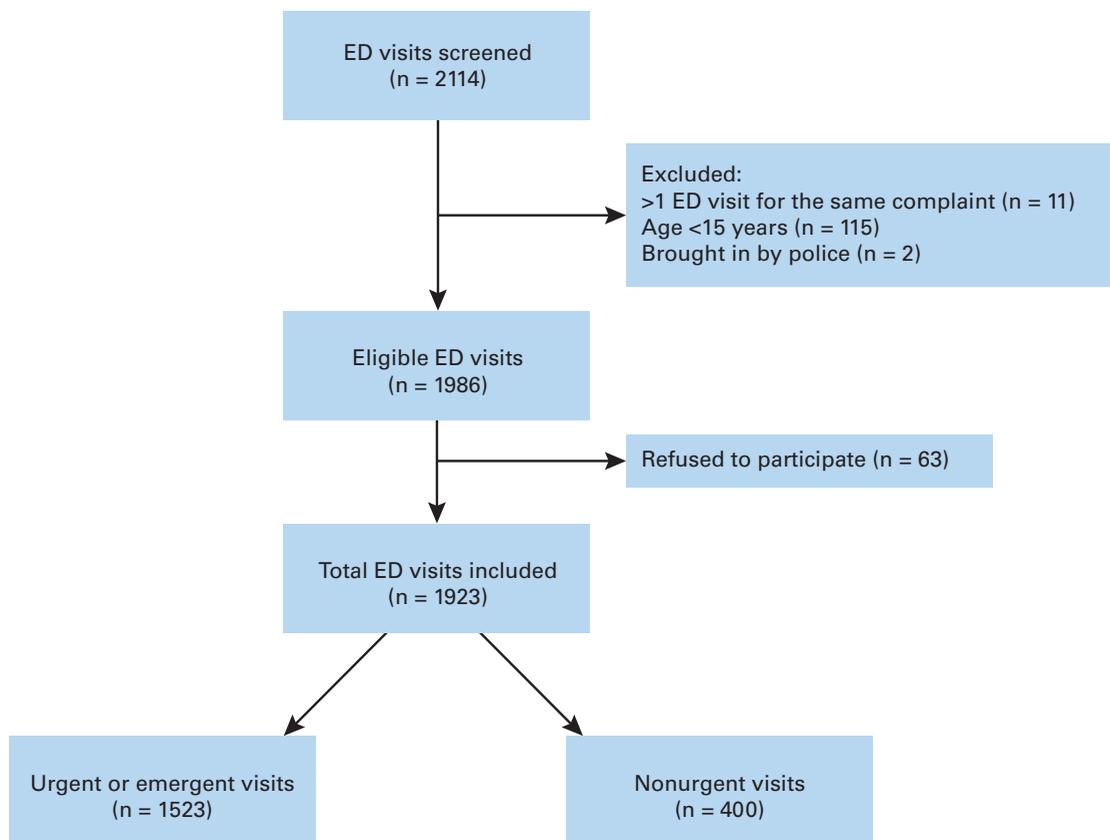
About 80% of the patients had government insurance, which is obligatory for government personnel and pays for all or most ED costs, while the rest (20%) lacked any health insurance and hence were self-paying.

About half (49.5%) of the patients ( $n = 952$ ) sought healthcare during the afternoon hours (between midday and 5:59 PM). Whereas 41.4% of patients ( $n = 796$ ) visited the ED during evening hours (between 6:00 PM and 11:59 PM), 5.8% ( $n = 112$ ) visited the ED between 6:00 AM and 11:59 AM (morning shift). Fewer than 4% of patients ( $n = 63$ ) visited the ED between midnight and 5:59 AM (night shift).

The prevalence of nonurgent ED visits in this sample of 1923 patients was 20.8% (95% confidence interval [CI] 18.99%-22.61%). Table 1 shows the association between the main variables and nonurgent ED visits. The appropriateness of ED use was not associated with age of the patients. The prevalence of nonurgent ED visits was slightly higher in the younger age group (15-49 years) compared with the older age group ( $\geq 50$  years) (21.3% and 18.7%, respectively;  $P = .294$ ). (Patients aged  $< 15$  years are referred to a pediatric center according to the agreement between that center and our hospital.) According to previous studies in our hospital, the number of patients aged 15 to 49 years is approximately equal to the number aged  $\geq 50$  years or more. We had only a few patients aged  $> 80$  years, so we assumed that we had 2 groups equal in number.

Although the prevalence of nonurgent visits was slightly higher in women than men, the difference was not statistically significant (20.2% and 21.7%, respectively;  $P = .432$ ). A total of 233 patients with nonurgent problems were married (22.1% of all married patients), and 167 patients were unmarried (19.2% of all unmarried patients). This difference, however, was not statistically significant ( $P = .109$ ). Those with a higher level of education tended to have more nonurgent ED visits. Among 195 patients with a college education seen in the ED during the study period, 21.5% ( $n = 42$ ) presented for nonurgent problems. This percentage, on the other hand, was lower for those who had a high school education or less

■ **Figure.** Flow Diagram of Patient Recruitment



ED indicates emergency department.

(20.7%). However, higher education was not significantly correlated with an increased number of nonurgent ED visits ( $P = .791$ ). Only a small percentage of our patients had either a college education or were illiterate, and the majority had an educational level of high school or less. Therefore, we did not make more than 2 groups based on the educational level.

Patients whose visits were fully (or mostly) paid by health insurance accounted for the majority of nonurgent ED visits (82.8%). However, the proportion of patients with health insurance who presented to the ED for nonurgent problems was only slightly higher than that of patients without any health insurance and a nonurgent complaint (21.7% vs 17.4%, respectively;  $P = .063$ ). Nonurgent ED visits were most frequent during the night shifts (44.4%) and least prevalent during the afternoon shifts (15.6%). Morning shifts and evening shifts lay somewhere in between (32.1% and 23.5%, respectively). Comparing morning and afternoon shifts with evening and night shifts showed higher rates of nonurgent ED visits in the evening and the night shifts (17.4% vs 25%, respectively). This difference was shown to be of statistical significance ( $P < .0001$ ). Of 1130 patients who were seen in the ED during

weekdays, 20.9% ( $n = 236$ ) presented for nonurgent problems; a similar proportion was noted during weekends (164 of 793 patients; 20.7%) ( $P = .920$ ). **Table 2** summarizes patients' reasons for preferring ED care. The main reasons provided by 400 inappropriate users for attending the ED were "to obtain rapid treatment" (76.5%), "proximity" (52.8%), "low cost" (20.8%), and "unavailability of clinic care" (19.8%). Patients were free to declare more than 1 reason for their ED visit. Only 10.75% came to the ED because of a perceived urgent problem.

## DISCUSSION

The purpose of the present study was to evaluate the characteristics of the patients who seek medical care in the ED for nonurgent problems, as well as their reasons for doing so.

Our results indicate that the prevalence of nonurgent visits in our ED is high. About 1 in every 5 visits to our ED was for nonurgent (Canadian Triage and Acuity Scale level IV or V) problems. This finding is in keeping with that of other authors, according to the studies in Brazil and

## Emergency Department Nonurgent Visits

**Table 1.** Characteristics of Patients by Appropriateness of ED Visits

Characteristic	Total No. of Patients	Patient Group, n (%)		P <sup>a</sup>
		Nonurgent (n = 400)	Urgent or Emergent (n = 1523)	
<b>Sex</b>				
Male	1196	242 (60)	954 (62.6)	.432
Female	727	158 (40)	569 (37.4)	
<b>Age group, y</b>				
15-49	1571	334 (83)	1237 (81.2)	.294
>50	352	66 (17)	286 (18.8)	
<b>Marital status</b>				
Married	1052	233 (58.2)	819 (53.8)	.109
Single, widowed, or divorced	871	167 (41.8)	704 (46.2)	
<b>Health insurance</b>				
Insured	1527	331 (82.7)	1196 (78.5)	.063
Uninsured	396	69 (17.3)	327 (21.5)	
<b>Shift of presentation</b>				
Morning or afternoon	1064	185 (46.2)	879 (57.7)	<.0001 <sup>b</sup>
Evening or night	859	215 (53.8)	644 (42.3)	
<b>Days of the week</b>				
Weekends	793	164 (41)	629 (41.3)	.920
Weekdays	1130	236 (59)	894 (58.7)	
<b>Education</b>				
College	195	42 (11)	153 (10)	.791
Noncollege	1728	358 (89)	1370 (90)	

ED indicates emergency department.  
<sup>a</sup>By the  $\chi^2$  test.  
<sup>b</sup>Statistically significant.

France.<sup>5,29</sup> The prevalence of nonurgent visits reported in the literature, however, varies. One study in Turkey reported a higher prevalence than that observed in the present study,<sup>4</sup> and studies in California and France have shown a lower prevalence.<sup>9,24</sup>

Our data suggest that nonurgent visits were slightly more common among patients between 15 and 49 years of age compared with those older than 50 years. This difference, however, was not found to be statistically significant. A recent Brazilian study by Carret et al showed similar results.<sup>5</sup> Previous studies also demonstrated that nonurgent ED visits were more prevalent in younger age groups.<sup>10,24,30</sup> The reason for this finding in our study is unclear. We speculate that these patients have difficulty accessing care during work hours; hence, when they are free to attend to their medical problems, most sources of outpatient care are not available.

The study also showed that the rate of nonurgent ED use was not significantly different between men and women, although it was slightly higher in women. Previous investigators have examined whether there is a gender predilection for nonurgent

visits, and some have reported a higher prevalence among females.<sup>4,5,10,25</sup> Our study failed to show such a difference.

Consistent with the report by Carret et al,<sup>5</sup> our study showed no relationship between marital status and nonurgent ED visits. The results of our study also showed no relationship between the level of education and nonurgent visits, in agreement with another recent study.<sup>5</sup> Other studies, however, have revealed a significant relationship between this variable and nonurgent ED visits.<sup>4,24</sup> However, It should be emphasized that the proportion of patients with a college education in either group was low; therefore, generalization of this finding should be performed with caution.

Possession of health insurance has had various effects on the prevalence of nonurgent visit in different studies.<sup>4,25,31-33</sup> Some studies, like ours, have failed to show a statistically significant difference between patients with and without health insurance.<sup>25,31</sup> Others have indicated that patients with Medicaid in the United States are more likely to present to the ED for nonurgent problems.<sup>4,32,33</sup> One study showed that this effect is different between adult and pediatric patients.<sup>31</sup>

■ **Table 2.** Reasons Patients Gave for Inappropriate (Nonurgent) Visits to the ED<sup>a</sup>

Reason	No. (%)
Obtaining rapid care	306 (77)
Proximity	211 (52.8)
Low cost	83 (20.8)
Unavailability of clinic care	79 (19.8)
Better care	45 (11.3)
Perception of urgent problems/urgency of the problem	43 (10.8)
Having medical records in this hospital	41 (10.3)
Being referred by a clinic or office	29 (7.3)
Being an employee of this hospital (patient or his/her relatives)	29 (7.3)
Dissatisfaction with clinic or office	18 (4.5)
Being brought by EMS ambulances	2 (0.5)
No reasons mentioned	2 (0.5)
Miscellaneous	2 (0.5)

ED indicates emergency department; EMS, emergency medical services.  
<sup>a</sup>Patients were allowed to state more than 1 reason.

As shown in this study, different proportions of patients with nonurgent problems presented to our ED during various shifts. We arbitrarily combined the morning and afternoon shifts to describe the day shift (between 6 AM and 6 PM), and the evening and night shifts to describe the night shift (between 6 PM and 6 AM). Significantly higher proportions of patients presented to the ED for nonurgent problems during night shifts compared with day shifts. A previous study showed that the number of patients presenting to the ED for nonurgent problems after 2:00 AM was very small.<sup>34</sup> Other studies have failed to show any difference in patients' tendency to present with nonurgent problems during various shifts. There might have been several reasons for our finding. The night shift is the time when most regular sources of primary care are closed. In our setting, clinics usually open in the morning and stay open through the afternoon. During off hours, people who need to seek medical care have few alternatives but the ED. Another reason may be that people find their problems more alarming during the night and fear that unexpected events may occur.

The proportion of patients with nonurgent problems presenting to the ED during weekends was not different from that during weekdays. To the best of our knowledge, this issue has not been addressed in previous studies.

A great proportion of patients with nonurgent problems reported their intention to obtain rapid treatment as the main reason for presentation to the ED. This issue has been evaluated in other studies. A recent qualitative study using the structured interview format was conducted in the United States and revealed 3 major reasons for choosing the ED for

nonurgent medical care. Shorter waiting time to be seen and evaluated in the ED was one of these reasons.<sup>35</sup> Another study in Turkey also pointed to quick care and laboratory results as one of the reasons for patients' presentation to the ED for nonurgent problems.<sup>4</sup>

Shift of presentation was the only factor found to be different in nonurgent visits. As we have no obvious reason for this result except a hypothesis, we are going to investigate this issue in detail. Social training through media may influence the attitudes of people toward the services they might expect EDs to provide. Because obtaining rapid care was the most common reason our patients gave for nonurgent ED use, the belief that rapid care is always required needs to be corrected.

### Limitations

Our study had several limitations. The most important limitation is the methodology we used to determine the appropriateness of an ED visit. We relied on the nurses' classification of patients and considered classes IV and V as "nonurgent." Although our nurses have been trained to use this triage scale, the accuracy of their performance has not been formally studied. Another major limitation of this study relates to the potential for selection bias. Although the number of patients who refused to take part in the study was small, we do not know whether nonparticipants were systematically different from those who participated. Another limitation was that the study was based on patient responses and their answers were not verified. As our hospital is a tertiary care referral center with unique characteristics, this study may not

show the overall appropriateness of ED use in Iranian hospitals. Finally, our study is limited by its descriptive nature and the use of univariate analyses.

### Future Direction

Multicenter studies (including several hospitals of varying sizes and with different facilities) that rely on more rigorous criteria for nonurgent visits are required to substantiate the results of this study. Whether the nurse who performs the triage and the ED practitioner agree on the urgency of a visit needs further evaluation; the consistency of the definition of “urgent” according to medical status also needs to be investigated. Interventions designed to teach people how to assess the urgency of their problems and to modify people’s expectations about services provided by EDs might be helpful. Comparing the cost of care in the ED and lower acuity settings needs to be done.

## CONCLUSIONS

The results of this study corroborate the previous findings that nonurgent ED visits are common. This pattern of use was shown to be more frequent in the younger (<50 years) age group. The prevalence of presentation for nonurgent problems was higher between 6 PM and 6 AM. Gender, marital status, education, health insurance, and day of the week had no association with nonurgent presentation. Intention to obtain rapid treatment was the most commonly cited reason for presenting to the ED.

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## REFERENCES

1. Barthell EN. Opening the ED doors. *Health Forum J.* 2003;46(3):45-46.
2. McCaig LF, Nawar EW. National Hospital Ambulatory Medical Care Survey: 2004 emergency department summary. *Adv Data.* 2006;(372):1-29.
3. Vertesi L. Does the Canadian Emergency Department Triage and Acuity Scale identify non-urgent patients who can be triaged away from the emergency department? *Can J Emerg Med.* 2004;6(5):337-342.
4. Oktay C, Cete Y, Eray O, Pekdemir M, Gunerli A. Appropriateness of emergency department visits in a Turkish university hospital. *Croat Med J.* 2003;44(5):585-591.
5. Carret ML, Fassa AG, Kawachi I. Demand for emergency health service: factors associated with inappropriate use. *BMC Health Serv Res.* 2007;7:131.
6. Gill J. Nonurgent use of the emergency department: appropriate or not? *Ann Emerg Med.* 1994;24(5):953-957.
7. Grumbach K, Keane D, Bindman A. Primary care and public emergency department overcrowding. *Am J Public Health.* 1993;83(3):372-378.
8. Gifford MJ, Franaszek JB, Gibson G. Emergency physicians' and patients assessments: urgency of need for medical care. *Ann Emerg Med.* 1980;9(10):502-507.
9. Baker DW, Stevens CD, Brook RH. Regular source of ambulatory care and medical care utilization by patients presenting to a public hospital emergency department. *JAMA.* 1994;271(24):1909-1912.
10. Bianco A, Pileggi C, Angelillo IF. Non-urgent visits to a hospital emergency department in Italy. *Public Health.* 2003;117(4):250-255.
11. Nourjah P. National Hospital Ambulatory Medical Care Survey: 1997 emergency department summary. *Adv Data.* 1999;(304):1-24.
12. Smith RD, McNamara JJ. Why not your pediatrician's office? a study of weekday pediatric emergency department use for minor illness care in a community hospital. *Pediatr Emerg Care.* 1988;4(2):107-111.
13. Weissman JS, Stern R, Fielding SL, Epstein AM. Delayed access to health care: risk factors, reasons, and consequences. *Ann Intern Med.* 1991;114(4):325-331.
14. Baker DW, Shapiro MF, Schur CL. Health insurance and access to care for symptomatic conditions. *Arch Intern Med.* 2000;160(9):1269-1274.
15. Hutchison B, Østbye T, Barnsley J, et al; Ontario Walk-In Clinic Study. Patient satisfaction and quality of care in walk-in clinics, family practices and emergency departments: the Ontario Walk-In Clinic Study. *CMAJ.* 2003;168(8):977-983.
16. Canadian Association of Emergency Physicians; National Emergency Nurses Affiliation. Joint Position Statement on emergency department overcrowding [in English, French]. *CJEM.* 2001;3(2):82-88.
17. Young GP, Wagner MB, Kellermann AL, Ellis J, Bouley D. Ambulatory visits to hospital emergency departments: patterns and reasons for use. 24 Hours in the ED Study Group. *JAMA.* 1996;276(6):460-465.
18. Sempere-Selva T, Peiró S, Sendra-Pina P, Martínez-Espín C, López-Aguilera I. Inappropriate use of an accident and emergency department: magnitude, associated factors, and reasons—an approach with explicit criteria. *Ann Emerg Med.* 2001;37(6):568-579.
19. Buesching DP, Jablonowski A, Vesta E, et al. Inappropriate emergency department visits. *Ann Emerg Med.* 1985;14(7):672-676.
20. Murphy AW. “Inappropriate” attenders at accident and emergency departments. I. definition, incidence and reasons for attendance. *Fam Pract.* 1998;15(1):23-32.
21. Northington WE, Brice JH, Zou B. Use of an emergency department by nonurgent patients. *Am J Emerg Med.* 2005;23(2):131-137.
22. Coleman P, Irons R, Nicholl J. Will alternative immediate care services reduce demands for non-urgent treatment at accident and emergency? *Emerg Med J.* 2001;18(6):482-487.
23. Pereira S, Oliveira e Silva A, Quintas M, et al. Appropriateness of emergency department visits in a Portuguese university hospital. *Ann Emerg Med.* 2001;37(6):580-586.
24. Lang T, Davido A, Diakité B, Agay E, Viel JF, Flicoteaux B. Using the hospital emergency department as a regular source of care. *Eur J Epidemiol.* 1997;13(2):223-228.
25. Petersen LA, Burstin HR, O'Neil AC, Orav EJ, Brennan TA. Non-urgent emergency department visits: the effect of having a regular doctor. *Med Care.* 1998;36(8):1249-1255.
26. Koziol-McLain J, Price DW, Weiss B, Quinn AA, Honigman B. Seeking care for non-urgent medical conditions in the emergency department: through the eyes of the patient. *J Emerg Nurs.* 2000;26(6):554-563.
27. Simonet D. Cost reduction strategies for emergency services: insurance role, practice changes and patients accountability. *Health Care Anal.* 2009;17(1):1-19.
28. Mehrdad R. Health system in Iran. *JMAJ.* 2009;52(1):69-73.

29. Bezzina AJ, Smith PB, Cromwell D, Eagar K. Primary care patients in the emergency department: who are they? a review of the definition of the 'primary care patient' in the emergency department. *Emerg Med Australas.* 2005;17(5-6):472-479.
30. Shah NM, Shah MA, Behbahani J. Predictors of non-urgent utilization of hospital emergency services in Kuwait. *Soc Sci Med.* 1996;42(9): 1313-1323.
31. Irvin CB, Fox JM, Smude B. Are there disparities in emergency care for uninsured, Medicaid, and privately insured patients? *Acad Emerg Med.* 2003;10(11):1271-1277.
32. Cunningham PJ, Clancy CM, Cohen JW, Wilets M. The use of hospital emergency departments for non-urgent health problems: a national perspective. *Med Care Res Rev.* 1995;52(4):453-474.
33. Liu T, Sayre MR, Carleton SC. Emergency medical care: types, trends, and factors related to nonurgent visits. *Acad Emerg Med.* 1999;6(11): 1147-1152.
34. Guterman JJ, Franaszek JB, Murdy D, Gifford M. The 1980 patient urgency study: further analysis of the data. *Ann Emerg Med.* 1985; 14(12):1191-1198.
35. Howard MS, Davis BA, Anderson C, Cherry D, Koller P, Shelton D. Patients' perspective on choosing the emergency department for non-urgent medical care: a qualitative study exploring one reason for overcrowding. *J Emerg Nurs.* 2005;31(5):429-435. ■