Original Article

Emergency department visits: Why adults choose the emergency room over a primary care physician visit during regular office hours?

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BACKGROUND: It has been estimated that up to one third of all emergency department (ED) visits may be "inappropriate" or non-emergent. Factors that have been speculated to be associated with non-emergent use have been noted to include low socioeconomic status, lack of access to primary care, lack of insurance, convenience of "on demand care" and the patient's individual perception of their complaint urgency. The objective of this study is to identify the reasons contributing to self-perceived non-emergent adult emergency department visits during primary care physician office hours of operation.

METHODS: This study was a single-center, descriptive study with questionnaire. The questionnaire was collected from patients meeting exclusion/inclusion criteria who were triaged into an acute or fast track part of the emergency department during regular business hours on Monday through Friday, 8:00 am-5:00 pm during the months of July 2011 and August 2011. Questionnaire data were categorical and summarized using counts and percentages. Data collected included patient demographics, information about the patient's primary care provider, and information about the emergency department visit in question. All responses were compared among patients with visits considered to be non-emergent to those considered to be emergent by using individual chi-square tests.

RESULTS: There were 262 patients available for the study. The patients were grouped according to their perception of the severity of their complaints. Roughly half of the patients placed themselves into the non-emergent category ($n=129$), whereas the other half of the patients categorized themselves into the emergent group ($n=131$). There were statistically significant differences in marital status and employment status between the two groups. It was found that 61.5% of the non-emergent patients were single, while 58.3% of the emergent patients were married. In the non-emergent group, 59.7% were unemployed, but in the emergent group 60.3% were employed ($P<0.05$). However, no other factors were significantly different.

CONCLUSIONS: Our study did not identify a statistically significant factor to the reasoning behind why patients choose the emergency department over a primary care physician during regular office hours. The only significant demographic indicating who was more likely to make this choice during the specified time frame was being single and employed with perceived non-emergent complaint. Patients without insurance and/or without a primary care physician were no more likely to visit the emergency department with a self-perceived non-emergent issue than patients with insurance and/or with an established primary care physician.

KEY WORDS: Emergency department; United States; Overcrowding; Primary care physician

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INTRODUCTION

In the United States, there were 117 million visits to emergency departments in 2007, an increase of 23% since 1997, according to the last published National Health Statistics Report. One year prior to this, in 2006, the Institute of Medicine had noted an increase in the number of emergency department (ED) visits coupled with a decrease in the number of emergency departments, causing concern as overcrowding has been identified as an increasingly reported problem. The increasing number of ED visits was attributed to providing care to the uninsured, as well as to those unable to make timely appointments with their primary care physicians.^[1]

The obvious concern with this increasing strain on the ED system is the potential negative effects on the quality of patient care. Inappropriate or non-emergent visits are a cause of concern for multiple reasons. Non-emergent visits place a strain on ED staff and resources, diverting them from the more critical patients as well as increasing work load leading to decreased staff and patient satisfaction.^[2] The American College of Emergency Physicians 2009 National Report Card and the Government Accountability Office have reported major issues impacting the quality of ED care as being the diversion of ambulances, hospital crowding, boarding in the ED, and high rates of individuals that are uninsured. Despite numerous published and often unfounded concerns regarding the burden of the uninsured and hospital crowding on the ED system in 2007, approximately 81% of all patients visiting the ED in fact had insurance and nearly 84% of all patients were discharged from the ED.^[1,3]

It has been estimated that up to one third of all ED visits may be "inappropriate" or non-emergent. Factors that have been speculated to be associated with non-emergent use have been noted to include low socioeconomic status, lack of access to primary care, lack of insurance, convenience of "on demand care" and the patient's individual perception of their complaint urgency.^[4] As one might expect, some studies have shown that less urgent complaints are seen more often in late evening hours and on weekends when clinics and private offices are not open.^[2] It is for this reason that the study we conducted at our hospital was designed to exclude patients visiting the ED during those time frames in order to take out that motivating variable.

Another highly theorized contributing factor to the increasing number of ED visits is the use of the

ED by patients without emergent conditions that could otherwise be handled at primary care physician offices or clinics. It has been widely debated as to why patients visit the ED over primary care providers in general. Roughly 34% of the 2007 ED visits were during the typical business hours of 8:00 am-5:00 pm, Monday through Friday.^[1] An ED visit is generally not as cost effective as primary care physician visits, and patients do not receive the continuity of care in ED that is provided by primary care physicians with whom an established medical relationship exists.^[5] It has been concluded that non-emergent ED use was related to insurance status and/or type of insurance possessed; therefore, hypothesized that increasing access to primary care physicians would decrease the incidence of such ED visits.^[6] However, another study conducted with both adult and pediatric populations in one urban facility demonstrated that insurance status and lack of primary care physician had little effect on ED utilization. It concluded that most patients perceived their chief complaint as more serious and urgent than the triage level that was assigned to them, and that this in turn, was what brought them to the ED.^[7]

In one Virginia urban hospital study of insured patients only, nearly all patients had access to a primary care provider and it was found that the most significant factor in non-emergent ED use was convenience.^[4] Convenience was also a key influence, along with limited access to "timely" primary care in another study undertaken during business hours in a suburban pediatric ED.^[2] An urban pediatric ED study, completed during regular office hours, where participants and/or parents responded that they had an established primary care physician, discovered that prolonged waiting times to see a primary care provider was a major factor in the decision to choose the ED for non-emergent problems. This study found that there was a lack of knowledge regarding the operation hours of their primary care physicians.^[8]

Of the previous studies conducted, no recent data to our knowledge had been obtained from a US suburban facility exclusively examining adult reasoning during typical primary care physician business hours. Our hospital is located in the suburban area of metropolitan Detroit, with a population highly impacted by job and insurance loss in the current economy. We hypothesized that patients who were unemployed, without health insurance and without an assigned primary care physician would be more likely to visit the ED with a

self-perceived non-emergent problem during typical primary care hours of operation.

METHODS

Participants

Participants were adult patients seen at a suburban hospital emergency department with approximately 60 000 patient visits per year. There were a total of 261 participants. Inclusion and exclusion criteria were determined and followed (Table 1). Participants were male and female at age of 18 or older, presenting to the emergency department between the hours of 8:00 am-5:00 pm, Monday through Friday. They were triaged into the acute (level 3) or fast track level (level 4) of chief complaints. Patients younger than 18 years old and those presenting outside of 8:00 am-5:00 pm or weekend were not included. Patients triaged with critical care level (level 1 or 2) of chief complaints were excluded. Pregnant, non-English speaking, or mentally/cognitively impaired patients were also not included in the study.

Design

Our emergency department has three regions based on triage assessment: critical care, acute care, and fast track. A questionnaire was given to patients meeting exclusion/inclusion criteria who were triaged into an acute care or fast track part of the emergency department during regular business hours during the months of July 2011 and August 2011. Data collected included patient demographics, information about insurance status, access to primary care physician, convenience of the use of ED versus primary care physician's office, and his or her perception of the severity of their chief complaints.

Informed consents were given with each questionnaire form, which the participants were asked

to read and sign. The consent form addressed the aim of the study. It was stated that their participation was fully voluntary, they could decline to participate in the experiment at any time, and data were collected anonymously. If any problems or questions arose, they were instructed to contact one of the research conductors.

Measures

Questionnaire data were categorical and summarized using counts and percentages. Responses were compared according to the perception of patient's complaint severity as being emergent or non-emergent using individual chi-square tests. All analyses were done using SAS 9.2. Categorical data were presented as count and row percent. Proportions were compared between the groups using the chi-square test or Fisher's exact test as appropriate with statistical significance set at $P<0.05$.

RESULTS

After exclusion and inclusion criteria were applied, a total of 262 patients were available for the study. Grouping of the patients was based on their perception of the severity of complaints: patients with self-perceived "minor" and "somewhat urgent" complaints were placed in the non-emergent group ($n=129$), whereas patients with self-perceived "very urgent" and "emergent" complaints were placed in the emergent group ($n=131$). Two patients were missing data on the severity of their complaints, as they did not complete this portion of the questionnaire. Statistical tests were unreliable when there were many group levels present, so no P values were given for age groups, time to primary care providers, or time to ED. There was purely coincidence that the sub-groups were equally powered.

Data analysis showed statistically significant differences in marital status and employment status between the two groups ($P<0.05$). Of the single patients, 61.5% perceived their complaints to be non-emergent, whereas 38.5% considered their complaints emergent. In the married group, 41.7% perceived their complaints as non-emergent and 58.3% as emergent. Widowed patients considered their complaints to be emergent (62.5%) versus non-emergent (37.5%). More patients that were employed found their complaints to be non-emergent (59.7%), whereas more unemployed

Table 1. Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Male & female adults aged >18 years	Minor subjects aged <18 years
Patients presenting to ED M-F, 8a-5p	Patients presenting outside of inclusion criteria time from or on weekends
Patients triaged with urgent or acute care level chief complaints	Patients triaged with critical care level of chief complaints
	Pregnant patients
	Non-English speaking persons
	Cognitively impaired or mentally impaired persons

Table 2. Demographics

Variables	Non-emergent, n=129 (%)	Emergent, n=131 (%)	P value
Month			
July 2011	68 (46.3)	79 (53.7)	0.217
August 2011	61 (54.0)	52 (46.0)	
Gender			
Male	51 (54.8)	42 (45.2)	0.209
Female	78 (46.7)	89 (53.3)	
Age group			
18-25	29 (67.4)	14 (32.6)	—
26-35	24 (61.5)	15 (38.5)	
36-45	18 (48.7)	19 (51.4)	
46-55	20 (47.6)	22 (52.4)	
56-65	14 (48.3)	15 (51.7)	
66+	24 (34.3)	46 (65.7)	
Marital status			
Single	67 (61.5)	42 (38.5)	0.005
Married	53 (41.7)	74 (58.3)	
Widowed	9 (37.5)	15 (62.5)	
Employed			
Yes	77 (59.7)	52 (40.3)	0.001
No	52 (39.7)	79 (60.3)	

Table 3. Questionnaire responses regarding insurance, PCP information, convenience and transportation

Variables	Non-emergent, n=129(%)	Emergent, n=131(%)	Total	P value
Insured				
Yes	104 (48.6)	110 (51.4)	214	0.479
No	25 (54.4)	21 (45.7)	46	
PCP status				
Yes	103 (47.9)	112 (52.1)	215	0.229
No	26 (57.8)	19 (42.2)	45	
Annual PCP				
Yes	83 (44.4)	104 (55.6)	187	
No	20 (69.0)	9 (31.0)	29	
PCP hours				
Yes	67 (47.5)	74 (52.5)	141	0.946
No	36 (48.0)	39 (52.0)	75	
Time to PCP				
5 minutes	27 (41.5)	38 (58.5)	65	—
10 minutes	21 (48.8)	22 (51.2)	43	
15 minutes	30 (47.6)	33 (52.4)	63	
30 minutes	19 (52.8)	17 (47.2)	36	
1 hour+	6 (66.7)	3 (33.3)	9	
Contacted PCP				
Yes	33 (42.9)	44 (57.1)	77	0.290
No	70 (50.4)	69 (49.6)	139	
Spoke with PCP				
Yes	30 (41.1)	43 (58.9)	73	0.308
No	3 (75.0)	1 (25.0)	4	
Appointed in 24 h				
Yes	18 (45.0)	22 (55.0)	40	0.455
No	12 (36.4)	21 (63.6)	33	
Sent to ED				
Yes	26 (41.9)	36 (58.1)	62	1.000
No	4 (36.4)	7 (63.6)	11	
Time to ED				
5 minutes	42 (51.9)	39 (48.2)	81	—
10 minutes	29 (46.8)	33 (53.2)	62	
15 minutes	33 (50.8)	32 (49.2)	65	
30 minutes	22 (51.2)	21 (48.8)	43	
1 hour+	3 (37.5)	5 (62.5)	8	
Convenience				
ED	66 (52.0)	61 (48.0)	127	0.518
PCP	54 (47.8)	59 (52.2)	113	
Transportation				
Private vehicle	115 (51.6)	108 (48.4)	223	0.122
Ambulance	14 (37.8)	23 (62.2)	37	

PCP: primary care physician.

patients found their complaints to be emergent (60.3%) (Table 2).

Most of the patients were insured ($n=214$) and had a primary care physician ($n=215$). Out of the 215 patients who reported having a primary care physician, 141 knew their physician's office hours. Considering the questioning occurred during normal office hour, 77 out of 216 patients contacted their primary care physicians before arriving at the ED. Of the 73 patients who were able to speak with their physicians or the staff, 40 were offered an appointment within the next 24 hours. Although not significant, 53% of the patients surveyed found the ED was more convenient than their primary care provider's office (47%) (Table 3).

DISCUSSION

While the number of available emergency departments is declining, the number of ED visits is on the rise and over half of those visits are triaged as emergent or urgent.^[2] There is growing concern regarding how to handle the troubling issue of an increasing volume of patients with decreasing resources to care for them. One common question in response to this problem is how to decrease non-emergent visits in order to accommodate more critical patients, thus maximizing a shrinking resource pool. Little consensus exists as to which specific populations are utilizing ED for non-emergent visits, or even why they are doing so.

There have been prior investigations suggesting that people with commercial insurance had fewer non-emergent visits.^[2] There have been studies which exhibited lower rates of such visits among the elderly, and higher rates among the lower socioeconomic populations, in pediatric patients and in those without a primary care physician.^[9]

Other research has found that primary care provider availability, ease of access to emergency care, and self-perceived severity of complaints were the most influential factors.^[10] In addition to these points, multiple studies have shown that many patients view the ED as faster and more convenient.^[4,5,7,11] In Kentucky, one survey revealed that patients in fact would prefer to see their usual primary care physicians, but nearly half would "seek care elsewhere" if they could not be seen the same day.^[12] Our study did not show a statistically significant difference in patient perceptions regarding convenience of ED versus primary care providers.

Another reason that patients with non-emergent visits come to the ED is due to referral. Studies have shown

that though many patients admittedly do not attempt to make contact with their primary care physicians, of those that do, a vast majority are directed to go to the ED.^[2,4,13] An United Kingdom study found that patients whom self-referred themselves to the ED had the same incidence of non-emergent complaints as those patients referred by their primary care providers.^[14] In our research, the self-referral versus primary care referral rates showed more patients not contacting their primary care physicians before visiting the ED. Of the patients who did contact their physicians, more were sent directly to the ED; however the data were not significant. Regardless of how the patient was referred to the ED, the fact of the matter remains that there is "considerable variability" in non-emergent ED use when comparing data from a number of studies and literature available on the topic.^[9]

Such inconsistent data regarding non-emergent ED visits seem to be due to the lack of a clear, universal definition among patients and health care providers as to just what the term "non-emergent" exactly means. Even one England nursing journal article pointed out that medical professionals often fail to recognize the discrepancy between medical personnel and patient perceptions of the severity of their conditions.^[15] Thus, data regarding rates of inappropriate ED use are so variable because in the end, they really come down to show how the patient views the severity of his or her medical issue.^[9,16] Moreover, studies have recognized that the perspectives of patients, who generally have little to no medical training or knowledge, are substantially different from the opinion of health care providers.^[2,6,7,9,15]

An analysis of the triage systems of identification of non-emergent versus emergent conditions revealed that most triage processes have poor sensitivities and specificities with regards to determining the two conditions.^[17] With such errors among the medically trained, it is unreasonable to expect that patients would have the knowledge necessary to accurately "self-triage" themselves to the proper facility of care. Available data have suggested that even the term "emergency department" is construed differently between physicians and patients.^[6] Additionally, another study looked at the definition of the word "emergency" between internal medicine and emergency medicine physicians. The study found that not only was there a lack of agreement between patient and physician perception, but that the two physicians did not have the same opinion of what the term meant.^[11]

Various methods have been devised in an attempt to create a clear standard to determine what defines "appropriate" use of the ED; however there are no strong criteria to accurately identify such patients to date. A study examining such methods stated "emergency physicians should remain cautious when implementing a protocol that defines and restricts inappropriate emergency department visits".^[18]

So how can non-emergent visits be decreased when even the definition of the term remains unclear? Over the years, multiple hypotheses regarding how to potentially decrease the rates of non-emergent visits have been proposed, some of which include ensuring patients have primary care physician access, requiring pre-approval or referral from primary care providers, and educating patients on "proper use of the emergency room versus use of a general practitioner". All of these theories have been found to be ineffective solutions during later studies and investigations of the matter.^[2,4,7,13] A reasonable and effective solution to the issue has yet to be discovered or identified. The fact of the matter remains clear that patients who perceive their complaints as serious enough to warrant medical evaluation the same day, regardless of the true urgency of their conditions, will continue to utilize the ED. Because of the Emergency Medicine Treatment and Labor Act (EMTALA) of 1986, which mandates that medical evaluation be available continuously to all who seek it, we will continue to see such patients frequenting the ED.^[19]

It is obvious that this will remain an issue of concern to EDs across the nation. There is a growing deficit of the number of emergency departments as well as the number of primary care physicians. With reductions in reimbursement rates, primary care doctors will have little motivation to work lengthy, inconvenient hours in order to expand availability of care to patients.^[2] By observing data regarding effects of universal health care systems on emergency departments in other countries, it can be reasonably expected that as insurance coverage increases in the United States, so will utilization of the ED for non-emergent care.^[13] Many departments nationwide have implemented other strategies such as "Fast Track" or "Express Care" programs to accommodate the growing number of non-emergent visits, but as of date, no substantial studies have investigated the effects of such programs on the overall quality of patient care.^[20]

There are limitations to this study. First, this is a single center study with a small sample size, conducted over a limited time frame. The data obtained

may not apply to other patient populations. Also, the study was not conducted with a random sample of patients and selection bias may have occurred secondarily. The study also relies on patient responses on a questionnaire, hence, veracity, which cannot be objectively confirmed, may bias the study. We did not review medical records or call primary care physicians to confirm patient responses. The presence of personnel during questionnaire completion may have biased the responses as well. Patients were informed that the questionnaire was anonymous and that their participation would have no effect on the care they received during their ED visit, so the motivation of the patient to provide inaccurate information intentionally would not be expected to be significant.

During the time of our investigation, our emergency department had three regions based on triage assessment: a fast track area, an acute care area, and a critical care area. In our study, we had no part in the triage assessment and therefore depended on patient placement via a trained triage nurse. Possibly, a number of patients were incorrectly triaged and placed into a higher or lower level of care than required, thus affecting the number of patients recruited. Also, during evaluation, the patient may relate further information to the physician or the patient develops new or worsening symptoms while in the emergency department that would change the level of severity, thus changing the patient's triage acuity. Another limitation to our investigation would be the lack of a standard definition of what "emergent" versus "non-emergent" meant to patients completing the questionnaire. This study, however, was not examining what the terminology meant to the patient population, but how they perceived their complaints and if these perceptions were more likely to be present in one demographic group than another.

In conclusion, no studies have simultaneously compared urban, suburban and rural hospital populations regarding utilization of emergency departments versus primary care physicians during regular business hours. The research that has been undertaken appears highly variable, and has yet to identify a single, most common factor in the choice to use an ED for non-emergent issues that could be managed by a primary care physician. Our study, consistent with most of the investigations examining similar data, did not discover a statistically significant factor which defines patient decision-making made by these scenarios. The only significant demographic

indicating which patient was more likely to use an ED over a primary care provider during regular office hours for non-emergent complaints was employment and marital status.

In our patient population, the effects of insurance status and established primary care physician on the decision to present to an ED for non-emergent care were unfounded. Patients without insurance and/or without a primary care physician were no more likely to visit the ED with a self-perceived non-emergent issue than someone with insurance and/or with an established primary care physician. Further investigation regarding the reasons that primary care providers refer patients to the ED could potentially be beneficial in identifying ways to decrease non-emergent ED visits.

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Ethical approval: The study was approved by the Ethical Committee of Henry Ford Macomb Hospital, Clinton Township, MI, USA.

Conflicts of interest: The authors declare that there is no conflict of interest.

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