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Final Report

Assessing challenges with access to care for patients presenting to the emergency department for non-emergent complaints

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14. ABSTRACT

Emergency department (ED) utilization continues to climb nationwide resulting in overcrowding, increasing wait times, and a surge in patients with non-urgent conditions. Patients frequently choose the ED for apparent non-emergent medical issues or injuries that after-the-fact could be cared for in a primary care setting. We seek to better understand the reasons why patients choose the ED over their primary care managers.We surveyed patients that signed into the ED at the Brooke Army Medical Center as an emergency severity index of 4 or 5 (non-emergent triage) regarding their visit. We then linked their survey data to their ED visit. We defined their visit to be non-urgent and more appropriate for primary care, if they were discharged home and received minimal interventions. During the 2-month period, we collected data on 208 participants out of a total of 252 people offered a survey (82.5%). There were 92% (n=191) that were primary care eligible within our respondent pool. Patient perceptions of difficulty obtaining appointments appears to be a major component of the ED use for non-emergent visits. Within our dataset, most patients surveyed stated they had difficulty obtaining a timely appointment or self-reported as an emergency.

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DISCLOSURES: None

ETHICS: We submitted a research determination to the Regional Health Command – Central regulatory office. They reviewed our project and determined it met the primary definition of process improvement and did not require institutional review board oversight.

DISCLAIMER: The views expressed in this article are those of the authors and do not reflect the official policy or the position of the US Army Medical Department, the Department of the Army, the Department of Air Force, or the US Government.

ABSTRACT

Introduction: Emergency department (ED) utilization continues to climb nationwide resulting in overcrowding, increasing wait times, and a surge in patients with non-urgent conditions. Patients frequently choose the ED for apparent non-emergent medical issues or injuries that after-the-fact could be cared for in a primary care setting. We seek to better understand the reasons why patients choose the ED over their primary care managers.

Methods: We prospectively surveyed patients that signed into the ED at the Brooke Army Medical Center as an emergency severity index of 4 or 5 (non-emergent triage) regarding their visit. We then linked their survey data to their ED visit including interventions, diagnoses, diagnostics, and disposition by using their electronic medical record. We defined their visit to be non-urgent and more appropriate for primary care, or primary care eligible, if they were discharged home and received no computed tomography (CT) imaging, ultrasound, magnetic resonance imaging (MRI), intravenous (IV) medications, or intramuscular (IM) controlled substances.

Results: During the 2-month period, we collected data on 208 participants out of a total of 252 people offered a survey (82.5%). There were 92% (n=191) that were primary care eligible within our respondent pool. Most reported very good (38%) or excellent (21%) health at baseline. On survey assessing why they came, inability to get a timely appointment (n=73), and a self-reported emergency (n=58) were the most common reported reasons. Most would have utilized primary care if they had a next-morning appointment available (n=86), but many reported they would have utilized the ED regardless of primary care availability (n=77). The most common suggestion for improving access to care was more primary care appointment

availability (n=96). X-rays were the most frequent study (37%) followed by laboratory studies (20%). Before coming to the ED, 38% (n=78) reported trying to contact their primary care for an appointment. Before coming to the ED, 22% (n=46) reported contacting the nurse advice line. Based on our predefined model, 92% (n=191) of our respondents were primary care eligible within our respondent pool.

Conclusions: Patient perceptions of difficulty obtaining appointments appears to be a major component of the ED use for non-emergent visits. Within our dataset, most patients surveyed stated they had difficulty obtaining a timely appointment or self-reported as an emergency. Data suggests that most patients surveyed could be managed in the primary care setting.

INTRODUCTION

Background

Emergency department (ED) utilization has continued to climb nationwide resulting in overcrowding, increasing wait times, and a surge in patients with non-urgent conditions. The average number of visits has increased by 3.5% per year.[1] Demand growth for the ED has often resulted from use for non-urgent problems, [2] which in turn drives longer wait times. To meet patient needs, the Emergency Severity Index (ESI) triage system indexes patients into categories based on the urgency of their medical condition and the amount of resources they will need.[3,4] Focusing on civilian use of the ED, the ESI level can directly correlate with the price of the visit, concluding that a trip to the ED is much more expensive than a trip to their primary care provider (PCP) for the same health issue.[4] EDs often serve as a "safety net" due to their legal obligation to treat all patients in need, without considering their ability to pay.[5] Thus, ED use does not always reflect urgent medical conditions. The potential for use of the ED for primary care issues is a particular risk for military beneficiaries as these patients do not bear any cost share or out-of-pocket expense for utilization of healthcare at military treatment facilities.[6]

Previous studies show that ED overuse has increased over all patient populations.[7] In 2017, the CDC reported that nearly 1 in 5 adults and children sought care in the ED at least once during the previous year.[8,9] Overcrowding in the ED can lead to longer wait times causing delays in care and negative patient outcomes.[10-13] Increased wait times are strongly associated with patients that leave without completing treatment, leading to negative patient perceptions and financial

losses.[5,6,8-14] Patients choose the ED over other healthcare facilities due to various reasons including availability, the ability to get a complex workup done quickly, and fast tracking. A study done at the University of Sheffield, showed 44% of patients found their PCP inaccessible to their needs, limited appointments and lack of easy accessibility added to patients bypassing their PCP for the ED.[15] Previous studies have estimated that 13-27% of ED visits are primary care-related visits that could have easily been managed in the primary care setting.[15-17] . In 2017, the CDC reported the combined ED visits for ESI level 4 and 5 was 27.9% of all ED visits.[18] Nursing staff places patients into these categories to help streamline the patient flow into the appropriate department, such as trauma or a fast track ED. Fast tracking originates from the fact that most of the overcrowding in the ED involves low acuity patients.[10,19-22] Low acuity patients are those with minor injuries or illnesses that will likely use fewer resources than a high acuity or urgent patient. Conversely, when patients come to the ED for a non-emergent visit, this likely results in a primary care appointment going unfilled. This creates a lost opportunity for the Military Health System (MHS). Little data exists which describes ED visits for non-emergent issues within the Military Health System.

Goal of this Study

The purpose of our study was to determine why patients with non-emergency conditions seek care in the ED. We conducted a survey for patients visiting the ED categorized as ESI 4 or 5 and linked their survey data to associated interventions, workups, and dispositions.

METHODS

Ethics

We submitted a research determination to the Regional Health Command – Central regulatory office. They reviewed our project and determined it met the primary definition of process improvement and did not require institutional review board oversight.

Subjects and Settings

Our study setting took place at the Brooke Army Medical Center (BAMC) at Joint Base San Antonio, Texas. BAMC is the only level 1 trauma center in the DoD. The emergency department (ED) had nearly 84,000 visits during the last calendar year. The facility also serves as a public regional-receiving trauma center.

Our survey instrument addressed demographics, reasoning, and urgency for their visit to the ED as well as their support system at home and reasoning for choosing the ED over their primary care manager. Two investigators (SGS, WF) drafted the surveys then the other investigators provided face validation of these instruments. Due to restrictions in place secondary to the pandemic, we were not able to perform a pilot phase with the surveys. We utilized quota sampling to determine the ideal number of surveys for the study. We provided abstractors

training to include orientation to the standardized data abstraction forms and definitions of all variables. Study investigators also held weekly routine meetings to ensure proper case selections and exclusions.

Research staff offered surveys to patients triaged to ESI level 4 and 5 which represent non-emergent triage categories, as they checked into the ED.[2] Patients that were marked as "person under investigation" for COVID19 were not eligible to participate. Patients were categorized by nursing staff before being added into the system, dependent on their presumed resource need. Trained research staff collected the surveys from various points in the ED, either the ED waiting room or the Rapid Treatment Assessment (RTA) waiting room. We offered surveys during varying shifts with their work hours generally equally distributed from 0600-0200 to capture nearly all times of day when we have a significant proportion of patients checking in. We asked patients assigned an ESI score of 4 or 5 ESI if they would like to participate in research to improve the ED, before being placed into a room. A patient identification sticker was placed by the research staff on their survey to enable linking of survey data to their ED records for intervention and outcome data. All our ED evaluations including orders and disposition are captured within our electronic medical record. Study team members (ADT, CMC, SAJ, RSL) extracted the data from the EMR system with verification to ensure accuracy.

An encounter was determined to be primary care eligible if they met all the following criteria: discharged home; no computed tomography (CT) imaging, ultrasound, or magnetic resonance imaging (MRI) performed; and no intravenous (IV) medications administered. If they received

an oral medication, an intramuscular medication excluding controlled substances, received an x-ray, or had laboratory testing done they were still considered primary care eligible.[3-5]

Data Analysis

We performed all statistical analyses using commercially available database and statistical software. We presented continuous variables as means with confidence intervals (95%). We presented ordinal variables as medians with interquartile ranges (IQR). We presented nominal variables as percentages and numbers.

When reviewing the free text feedback, given the variable number and quality of responses we applied unstructured methods for assessing and extraction. The principal investigator (SGS) reviewed all comments for both relevancy and duplication of themes and presented to the remaining investigators for selection of the limited free-text comments provided within the manuscript.

RESULTS

During the 2-month period survey data, we received surveys from 208 participants out of the total 252 people offered a survey (82.5%). Of the 208 respondents, the median age was 40 (IQR 29-57), most were male (53%), and most spoke English (97%). Most reported very good (38%) or excellent (21%) health at baseline. The largest proportion were Army affiliated (44%), enlisted (61%), and presenting for care themselves (84%).(table 1) The median reported urgency

was 6 (IQR 6-8) with a similar pain rating of 6 (IQR 4-8).(table 2) On the survey assessing why they came, a self-reported emergency (n=58) and unable to get a timely appointment (n=73) were cited the most. Most would have gone to primary care if they had a next-morning appointment available (n=86) but many reported they would have come to the ED regardless of primary care availability (n=77). The most reported suggestion for improving access to care was more routine appointment availability (n=96) (table 3). X-rays were the most frequent study (37%) followed by laboratory studies (20%). Very few (2%) received an IV medication (table 4). Before coming to the ED, 38% (n=78) reported trying to contact their primary care for an appointment. Before coming to the ED, 22% (n=46) reported contacting the nurse advice line. The majority of those surveyed reported a strong support system on overall questioning.(figure 1)

Respondents reported a median of 2 visits (IQR 1-4) to healthcare providers in the past year – of those, 6% (12) reported 10 or more visits within the past year with one patient estimating 60 visits. When questioned about the last year, 58% (n=121) reported a previous ED visit (median 1, IQR 0-2). We found that 11% (n=22) had 3 or more visits to the ED in the past year. The survey showed 8% (n=18) of respondents reported they had a hospital admission in the past year for all causes (e.g. emergency, scheduled surgery, etc.)

The overwhelming majority (99%, n=207) were discharged from the ED. Of the IM medications (n=156) given, ketorolac was most frequent (n=35), followed by rabies prophylaxis (n=3), antibiotics (n=3), and a corticosteroid (n=3). The IV medications (n=4) consisted of antibiotics

(n=2) and controlled substances (n=2). Based on our predefined model, 92% (n=191) were primary care eligible.

Of the free text comments reported, there appeared to be a theme of difficulty accessing appointments and/or limited appointments, and challenges with access during the COVID19 pandemic (table 5).

DISCUSSION

In this study, we surveyed 208 patients ESI 4 and 5 patients visiting the ED, we determined most patients surveyed could likely be managed in a primary care setting, thus creating an opportunity to fill an unfilled primary care appointment with a non-emergent visit to the ED. This study adds data needed to better understand how to improve access of care to both emergent and non-emergent visits within the MHS. Our results suggest that pain may be correlated with their self-reported urgency and likely a driving factor for the acute care visit. Most patients offered the survey reported not being able to make a timely appointment or a self-reported emergency as their reasoning for not going to primary care. Unpublished data demonstrates that, on recent average, over 4000 appointments go unfilled monthly within with San Antonio Military Health System which may represent a lack of easy access to obtaining an appointment rather than lack of access (personal communication, Business Operations Division, Brooke Army Medical Center). The most common studies performed were x-rays and the most frequent IM medication was ketorolac, used for short term pain – both of which are easily obtainable in the primary care

setting. Out of the patients surveyed, the majority were discharged and based on our model their visit was primary care eligible. Our findings suggest that many ED visits represent encounters that are manageable in the primary care setting.

The most common suggestion for improving access to care was more short-term primary care availability, with most patients reporting they would have gone to primary care if they could obtain a next morning appointment. Perhaps a more convenient method for accessing short-term appointments would alleviate some of the non-emergent visits. Based on our data, less than half of the surveyed patients reported contacting their primary care provider; this further suggests that easier methods for appointments access would be beneficial. Most patients reported a strong support system meaning getting to the appointments does not appear to be a factor, merely having access to open appointments may be a contributor to non-emergent visits.[23] The majority of patients surveyed had reported a previous visit to the ED in the last year. A previous study indicated more frequent ED visits are associated with higher odds of having a non-urgent visit.[24] These results build on existing evidence showing that many visits to the ED that do not require urgent care with more specific application to the MHS.[1,25] Implementing a solution for real time appointment scheduling could help shift the non-emergent patients to primary care or other clinics. The New England Health Institute published a research article discussing possible solutions including open access scheduling, using case managers for frequent or vulnerable patients and in-house urgent care clinics.[7] Educating patients on when it is appropriate to use the ED may also help lower unnecessary appointments.

In addition to educational interventions, instituting copayment to reduce non-urgent ED care-seeking behavior have been studied.[26-31] Although studies showed mixed results in reductions in ED use, two factors seemed to be important to the success of financial incentives to reduce non-urgent ED use: 1) assuring sufficient knowledge among beneficiaries that such cost-sharing policies exist, 2) establishing higher ED visit copayments to deter non-urgent use. Additionally, studies conducted within vertically-integrated health systems suggest that care seeking behavior would shift from the ED to other settings (e.g., physician's office) as a result of ED copayments.[30] However, one ED-based study suggested that reluctance to pay cost-sharing could reduce ED care-seeking for potentially necessary visits (e.g., chest pain, shortness of breath, or abdominal pain complaints).[32] A solution could be a hybrid model in which copays are only implemented for non-emergency utilization (e.g. those discharged home that met our primary care model) and/or a rank-based system in which the copay is commensurate with the sponsors rank and income.

We must acknowledge that our primary care eligible design relied on an after-the-fact review of their workup and interventions. In this design, it lends itself to challenges as we are unable to quantitively measure the emergency versus urgency mindset of patients whether their issue truly requires an emergency (life, limb, eye sight, etc.) or represents and urgent need that is not met through the challenges we discovered with regard to the perceptions of access to care. The DoD adheres to the prudent layperson standard in determining whether a patient perceived an emergency and thus an post-hoc review must take this into account.[34] Future studies, perhaps using a qualitative design, may lend to a better understanding of the immediacy of the medical need versus the convenience factor the military ED offers at no cost. Moreover, while not

assessed in this particular study, a hybrid-based model in which components of the ED could be run like a primary care clinic in which they are scheduled a time to be seen and the low triage levels are seen in the order in which they check in. Such a model is currently available in some civilian centers in which patients can pre-check in for their "emergency" and be seen at a semi-scheduled time. Additionally, we must also acknowledge that our population is unique as the military healthcare represents a quasi-socialized medicine system in which our population has virtually unlimited access to care at little-to-no cost and our emergency centers do not serve as a de facto safety net for the uninsured in the way that our civilian counterparts often do.[35]

There are several limitations to this study. First, we only analyzed data until the patients were discharged, excluding any possible related return visits after the initial treatment. We based our study on a convenience sample with available staff which may limit generalizability. However, the staff coverage time was distributed through most of the 24 hours of operations from 0600-0200 which captures the overwhelming majority of our visit check in times. We only collected data for two months during the COVID19 pandemic which further hindered access to care as in-person appointments were limited and perhaps, patients feel as though they receive better quality care or the psychological benefits of an in-person assessment. Telemedicine could have played a factor as well by lowering the number of unnecessary ED visits. Given the MHS's forced expansion of telehealth services due to the COVID19 pandemic, it remains unclear if this may serve as another viable option for reducing ED use for non-emergent reasons even after the healthcare system returns to normal function.[36] Our survey did not capture data relative to those additional challenges as our study was initially setup prior to the pandemic effects on the MHS. The use of the ESI 4 and 5 as inclusion criteria could have affected our data because this scoring

system estimates nursing resources that will be required and not necessarily the acuity their illness or injury. As such, it is possible we missed other primary care eligible visits that received a higher ESI categorization. Furthermore, while patients stated they would have gone to primary care if an appointment were available, we do not yet have a method to assess whether that would actually happen.

CONCLUSION

Patient perceptions of difficulty obtaining appointments appears to be a major component of the ED use for non-emergent visits. Within our dataset, most patients surveyed stated they were unable to make a timely appointment or self-reported an emergency. Data suggests most patients could be managed in the primary care setting.

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TABLES

Table 1 – Demographics and disposition data (n=208)		
Demographics	Age*	40 (29-57)
	Male	53% (110)
	Female	47% (98)
	Other	0% (0)
Preferred language	English	97% (201)
	Spanish	2% (5)
	Other	<1% (1)
Self-reported health quality	Excellent	21% (44)
	Very good	38% (80)
	Good	26% (54)
	Fair	11% (23)
	Poor	2% (5)
Sponsor branch	Army	44% (92)
	Air Force	39% (83)
	Navy	8% (18)
	Marines	2% (4)
	Other/no response	5% (11)
Sponsor	Active duty	44% (93)
	National Guard	2% (5)
	Reserve	4% (9)
	Retired	36% (76)
	Other/no response	12% (25)
Sponsor pay grade	Enlisted	61% (127)
	Officer	22% (47)
	Warrant Officer	2% (4)
	Other/no response	14% (30)
Patient	Self	84% (175)
	Spouse	8% (17)
	Child	6% (12)
	Other/no response	2% (4)
Marital status	Single (never married)	21% (44)
	Married/domestic partnership	67% (140)
	Widowed	1% (3)
	Divorced	9% (19)
	Separated/Other	1% (2)
Typical healthcare location	Doctors office	79% (166)
	Urgent care	2% (5)
	Emergency department	13% (29)
	Other	4% (8)
Select past medical history	Congestive heart failure	<1% (1)
	Coronary artery disease	2% (5)
	Heart attack	1% (3)

	Chronic kidney disease	1% (2)
	Diabetes	11% (24)
	Hypertension	22% (46)

*reported as median and interquartile range

Table 2 – Self-reported urgency and pain (n=208)		
Self-reported urgency	Urgency*	6 (4-8)
	None#	3% (6)
	Mild (1-3)	17% (37)
	Moderate (4-6)	40% (83)
	Severe (7-10)	39% (82)
Self-reported pain	Pain*	6 (4-8)
	None#	8% (18)
	Mild (1-3)	17% (36)
	Moderate (4-6)	33% (68)
	Severe (7-10)	41% (86)

*reported as median and interquartile range
#percent and N (mutually exclusive)

Table 3: Survey questions assessing why the patient came to the emergency department (n=208)	
Why did you come to the ER instead of an alternate location (e.g. doctor's office or clinic)?	
This is an emergency	58
I couldn't reach my doctor	17
I couldn't get an appointment soon enough	73
ER was more convenient	46
My doctor/nurse told me to come to the ER	55
I have no other place I can go	16
I am unsatisfied with the care I receive by my regular doctor	7
I had no choice- the ambulance brought me	0
I needed answers to my health problems right away	36
The problem is too complex/ can't be handled during a routine doctor's office visit	16
I need a prescription filled or refilled	8
I was seen recently by my doctor for today's medical condition/problem	5
I can get everything done in one ER visit	25
I wanted a second opinion	1
I am going out of town – I need my condition to be addressed now	4
I couldn't wait for an appointment, my pain/condition has worsened	68
I prefer the emergency room	6
I do not have a Primary Care Provider assigned	11
I am unable/do not know how to schedule an appointment	7
Would you have gone to the clinic today if your primary care clinic (e.g. clinic or doctor's office) could…	
Provide a morning appointment	86
Provide an evening appointment	66
Provide a weekend appointment	34
It does not matter, I would still come to the ER.	77
How would you suggest improving your (or your dependent's) access to healthcare?	
A new clinic location	18
More routine appointment availability	96
More after-hours appointments during weeknights	47
More after-hours appointments during weekends	42

*patients could select more than one if applicable

Table 4 – Frequency of studies and interventions (n=208)		
Studies	Laboratory study	20% (43)
	X-ray	37% (77)
	CT scan	2% (5)
	MRI	1% (2)
	Ultrasound	3% (6)
Interventions	Oral medication	11% (22)
	IV medication	2% (4)
	IM medication	27% (56)
	Topical medication	1% (3)

Table 5 – Select comments lifted from the surveys
more weekend services
should be able to refer to outside agency when PCM is unavailable
waiting times for an apt are getting longer and longer. I realize during COVID the availability is slimmer but that isn't helping me
I'm retired 100% VA but have no clue who to contact for [outlying] health care on base versus only going to the VA
a provider that answers the phone that is available
quick access to reoccurring prescriptions
Tele-behavioral health would be beneficial for patient with emergencies on the weekends; weekend appts.
no suggestions, I feel the ER @ BAMC is the most efficient, caring and logical option for me. The care here is wonderful, and I always feel leaving better than when i came in.
it takes too long to get an appointment-usually 3 weeks or more.... by then you might be DEAD
more doctors need to be hired so that more care can be given. my husband and i have 24 years each to this country, now have to wait 2/3 weeks for an appointment
I needed someone to talk to this morning. Instead I have to leave a message and home number for them to call me back
perhaps an urgent care section for these type of injuries separate from the main ER
I feel I'm being denied access to health care because of the [coronavirus] situation. My access has been the emergency room
I suggest more availability for appointments, for both active duty and their dependents. Most people have to go to the ER for events that a PCM should be able to handle
my primary care was moved from north central federal clinic to the top floor of Baptist emergency hospital; almost triple the distance away, and I can never book appts as they are always booked almost a month in advance. They always send me to the ER for even the slightest issues, just b/c they are always too far booked. Increase the amount of appts..?

FIGURES

Figure 1 – Responses to support system questions