



Contents lists available at ScienceDirect

American Journal of Emergency Medicine

journal homepage: www.elsevier.com/locate/ajemThe
American Journal of
Emergency Medicine

Emergency department utilization by a jail population

Patrick J. Maher, MD^a, Adeyinka A. Adedipe, MD^b, Benjamin L. Sanders, MD, MPH^c, Taylor Buck^d, Paul Craven, MD^e, Jared Strote, MD, MS^{b,*}^a Department of Emergency Medicine, Icahn School of Medicine at Mount Sinai, New York, NY, United States of America^b Department of Emergency Medicine, University of Washington, Seattle, WA, United States of America^c Jail Health Services Division, Public Health Seattle & King County, United States of America^d University of Notre Dame, Notre Dame, IN, United States of America^e University of Washington School of Medicine, Seattle, WA, United States of America

ARTICLE INFO

Article history:

Received 18 May 2018

Received in revised form 10 June 2018

Accepted 15 June 2018

Available online xxxxx

Keywords:

Incarcerated

Emergency department

Reducing unnecessary visits

ABSTRACT

Background: Incarcerated individuals represent a significant proportion of the US population and face unique healthcare challenges. Scarce articles have been published about emergency department (ED) care of these patients. We studied the ED visits from one urban jail to better describe this population.

Methods: A cohort study design was used, identifying patients who were sent to the ED from a city jail in 2015. Demographics, triage information, length of stay, number of studies, billing codes, diagnoses, and disposition data were collected. These were compared to the overall ED patient population in the same year.

Results: 868 ED visits by jail patients occurred, representing 1.3% of the ED census. Compared to the general population, incarcerated patients were younger (32.1 years vs. 44.0 years, $p < .01$), healthier based on Elixhauser comorbidity scores (0.71 vs. 0.98, $p < .01$), and had lower admission rates (11.29% vs. 21.54%, $p < .01$). An abnormal vital sign was noted in 25% of incarcerated patients. Laboratory (61% vs. 57%, $p < .02$) and radiologic (63% vs 45%, $p < .001$) testing was more frequent for inmates and length of stay was longer (271 vs. 225 min, $p < .01$).

Conclusion: ED visits from jail were common, involving a relatively young and healthy population with a low incidence of abnormal vital signs and admission. Given the high costs associated with ED care and the medical resources available at some jails, further study should evaluate if increased jail medical capabilities could improve care and decrease costs by decreasing ED visits.

© 2018 Elsevier Inc. All rights reserved.

1. Introduction

The United States has a large incarcerated population, with a recent estimate of 2.1 million adults [1]. There are many obstacles to providing healthcare for this population: in addition to obvious logistical constraints, these individuals tend to have more healthcare needs. Compared to the general population, there is a higher use of tobacco, alcohol and drugs, and a greater likelihood of untreated or under treated psychiatric and chronic health conditions such as hypertension, diabetes, and blood borne viral infections [2,3,5,6]. In order to facilitate care, incarceration facilities in the US often have associations with local hospitals and emergency departments (EDs) [2–4].

Providing emergency care for these patients is also uniquely challenging. Policies often require continuous law enforcement presence, restraints, and restriction of information about follow-up. Emergency providers may feel the need for more testing than usual, as incarcerated

patients frequently have poor access to health care prior to incarceration and may not easily return to the hospital for a missed diagnosis. Conversely, physicians may perform a less thorough workup if there is suspicion of malingering, drug seeking behavior, or secondary gain [2,5,7,8].

Given these challenges, the potential impact on emergency departments (EDs) is high. Despite this, little is known about emergent care of this population. In order to better define these patients and the care they are receiving, we examined jailed patients' visits to one ED and compared them to the overall ED census at the same hospital.

2. Methods

2.1. Design and setting

This study was a single site, retrospective cohort study of individuals currently incarcerated in King County Correctional Facility (KCCF), in Seattle, Washington, who were sent for evaluation at the Harborview Medical Center ED during 2015.

* Corresponding author at: 1959 NE Pacific Street, Seattle, WA 98195, United States of America.

E-mail address: strote@uw.edu (J. Strote).

Seattle is a medium-sized city with a population estimate of 662,400 in 2015 [9]. Harborview Medical Center is the public hospital for the city and region; during the study period, the patient census was 65,888. It serves as the only hospital for patients from KCCF who require acute medical care. The two facilities are located 0.5 miles from each other.

KCCF books approximately 27,000 people per year, with a median length of stay of 72 h (mean 19 days). The population has average age of 35 and is 79% male. Medical and psychiatric physicians and nurse practitioners are available on call continuously and staff clinic hours every day. A registered nurse is always present for intake evaluation, medication administration, and monitoring. Before booking, individuals are screened and may be sent to the ED for workup or stabilizing treatment. For potentially emergent issues arising after booking, individuals are screened by registered nurses who decide ED transport using consultation with in-house providers at their discretion.

2.2. Patients and samples

The names of patients sent from KCCF for ED care during the study period were obtained from jail records electronically. Those sent from pre-booking were excluded so that only current inmates were included. KCCF records were then matched to ED encounters and medical records obtained. Variables recorded included age, gender, insurance status, triage vital signs and pain scores, emergency severity index (ESI) scores, Elixhauser comorbidity scores, ED arrival-to-departure time, number of laboratory and radiology studies ordered, category of final diagnoses, CPT billing codes, 72-hour recidivism rate, and disposition.

For comparison, we obtained available data for the same variables from the entire ED population over the study year; comparative data were not available for vital signs and 72-hour recidivism rates.

2.3. Statistical analysis

Statistical analysis was performed using Stata 14 (StataCorp; College Station, TX). Chi-square test was used for categorical data points; Student's *t*-test was used for continuous data points; and Wilcoxon test was used for non-parametrically distributed variables. The study was approved by the Institutional Review Board of the University of Washington and by the KCCF Research Administrative Review Committee.

3. Results

Of the 966 visit records obtained from KCCF, 65 were excluded due to lack of ED visit information and 33 were excluded as duplicates. The remaining 868 visits represent 1.3% of the total ED visits during the study period.

3.1. Demographics and insurance (Table 1)

Incarcerated patients were younger and more predominantly male compared to the total ED population ($p < .001$). Most (70%) KCCF patients were on Medicare or Medicaid; compared to all patients, there

Table 1
Characteristics of study populations.

Population characteristics	Jail patients (n = 868)		p value
	All patients (n = 65,888)		
Average age (years)	32	44	<.01
Male (%)	77	65	<.01
Insurance (%)			
Medicaid/Medicare	70	71	
None	26	11	<.01
Private	4	18	<.01

Demographics of the jail population and overall ED population during the same period.

were more KCCF patients with no insurance (26%) and fewer with private insurance (4%; $p < .001$).

3.2. Initial presentation (Table 2)

ESI scores for incarcerated patients included more level 3s (78%) and less of all others, compared to the general population ($p < .0001$). This population also had less pre-existing illness as indicated by Elixhauser comorbidity scores (0.7 vs. 1.0; $p < .0001$). Vital signs in the KCCF group tended to be within normal limits (75% of all presentations) and a majority of the abnormalities were mild hypothermia (11%). Pain scores were higher in the incarcerated population (6.8 vs. 5.7, $p < .0001$).

3.3. ED evaluation and treatment (Table 3)

A higher percentage of incarcerated patients underwent radiologic (63%; $p < .01$) and laboratory testing (45%; $p < .02$) compared to the general population; the number of studies per patient was low for both. CTs were performed on 24% of incarcerated patients, including 15% who received a head CT.

The most common ED procedures for incarcerated patients were incision and drainage (6% of visits), laceration repair (6%) and fracture reduction (1%). All other billable procedures occurred for <1% of visits.

ED visit time was longer for incarcerated patients with a median time difference of 46 min ($p < .01$).

Billing Evaluation and Management CPT codes for incarcerated patients tended to be high, with 73% a level 4 or 5, significantly more than the general population ($p < .001$).

Table 2
Initial ED presentation.

Initial presentation	Jail patients	All patients	p value
ESI	(%)	(%)	
1	<1	2	<.01
2	14	17	
3	78	60	
4	8	19	
5	<1	3	
Mean Elixhauser score	0.7	0.9	<.01
Mean pain score	6.8	5.7	<.01
Heart rate	(%)		
≥120 bpm	5		
≤50 bpm	2		
Normal	93		
Systolic blood pressure	(%)		
≥180 mm Hg	2		
≤90 mm Hg	1		
Normal	96		
Temperature	(%)		
≥38	2		
≤36	11		
Normal	87		
Respiratory rate	(%)		
≥24	2		
≤10	<1		
Normal	97		
Oxygen saturation	(%)		
≤92%	3		
Normal	97		
Any abnormal vital sign	(%)		
No	75		
Yes	25		

Characteristics of the initial presentation of patients to the emergency department. Vital sign data were not available for the overall emergency department population. ESI – emergency severity index.

Download English Version:

<https://daneshyari.com/en/article/8944647>

Download Persian Version:

<https://daneshyari.com/article/8944647>

[Daneshyari.com](https://daneshyari.com)