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PATIENT INSURANCE PROFILES: A TERTIARY CARE COMPARED TO THREE FREESTANDING EMERGENCY DEPARTMENTS

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☐ **Abstract—Background: It has been speculated that freestanding emergency departments (FEDs) draw more affluent, better-insured patients away from urban hospital EDs. It is believed that this leaves urban hospital–based EDs less financially secure. Objective: We examined whether the distribution of patients with four types of insurance (self-pay, Medicaid, Medicare, and private) at the main ED changed after opening three affiliated FEDs, and whether the insurance type distribution was different between main ED and FEDs and between individual FEDs. Methods: A retrospective analysis of insurance status of all patients presenting to our EDs from July 2006 through August 2013. Insurance was divided into self-pay, Medicare, Medicaid, and private insurance across three time periods, which reflect the sequential opening of each FED. Insurance types for each facility were compared for individual time periods and across time periods. χ^2 was used to analyze the data. Results: In the three studied time frames (periods B, C, and D), there were less privately insured patients and more self-pay, Medicaid, and Medicare patients at the main than at each FED ($p < 0.001$). Insurance types were significantly different between each of the three FEDs and the main ED ($p < 0.001$) and between each of the three FEDs ($p < 0.001$). Conclusions: There were less privately insured patients and more self-pay, Medicaid, and Medicare patients at the main ED compared to the FEDs. Privately insured patients decreased at both the FEDs and main ED during the study. Insurance distribution was significantly different between the main ED, and three FEDs, and between individual FEDs.** © 2016 Elsevier Inc. All rights reserved.

☐ **Keywords—freestanding emergency department; insurance**

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INTRODUCTION

The popularity and number of freestanding emergency departments (FEDs) has significantly increased in the past few years and continues to grow. It has been shown that these centers provide increased access and closer proximity emergency care to a greater number of patients through decreased travel time to an emergency facility (1). It has also been shown that FEDs have shorter ED wait times and lower acuity levels when compared to a tertiary care ED (2,3). Simon et al. examined the impact of opening two affiliated FEDs on patient volume at the main campus tertiary care center's ED and found the combined patient volumes at all three facilities increased by 45%. This could potentially indicate an increase in access to care (4).

Despite the evidence that FEDs potentially increase access to care, it has been speculated that they draw

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Table 1. Time Periods Reflecting the Opening of the Three Freestanding Emergency Departments

Period	Date	EDs Open
A	Before July 1, 2007	Main campus
B	July 1, 2007 to July 31, 2009	Main plus 1 FED
C	August 1, 2009 to March 11,2012	Main plus 2 FEDs
D	After March 12, 2012	Main plus 3 FEDs

FED = freestanding emergency department.

better-paying and more affluent customers away from more urban-based hospital EDs. It is believed that this leaves urban hospital–based EDs less financially secure. This is because the percent of charges reimbursed vary according to insurance type. In the ED, Medicaid has the largest difference between the mean amount charged and received, followed by Medicare, private third-party payers, and self-pay (5). Furthermore, privately insured patients provide a higher reimbursement ratio per year compared to publically insured or self-pay patients (5). A previous study examined the acuity levels of patients presenting to FEDs compared to a tertiary care ED and found the average Emergency Severity Index level at the main ED was 3.04 compared to the three FEDs, which were 3.42, 3.22, and 3.38 (6).

Because of this variation, it is important to understand the insurance profiles of patients visiting FEDs and trends that may be seen at nearby urban tertiary care center EDs. To our knowledge no prior study has evaluated the insurance profiles of patients seen at FEDs compared to an urban tertiary care center ED (main ED).

Our goal was to determine the distribution of patient insurance profiles for a Level I trauma urban tertiary care center (main) ED and three associated FEDs. The three FEDs studied were located 9.6 miles north (FED1), 11.4 miles west (FED 2), and 11.8 miles south (FED 3) of the main ED. We examined whether the distribution of patients with four types of insurance (self-pay, Medicaid, Medicare, and private) at a main ED changed significantly after the opening of three affiliated FEDs. We also evaluated whether the insurance type distribution was significantly different between main ED and FEDs and between individual FEDs and how that changed over time.

METHODS

This retrospective study analyzed the insurance type of all patients presenting to the main ED and each of the three FEDs from July 2006 through August 2013. Insurance data were obtained from the hospital finance and billing department. Insurance categories were divided into self-pay, Medicaid, Medicare, and private insurance. We included military and Workers' Compensation into private insurance. Period A (control) was July 2006 through June 2007, when only the main ED was open. Period B was July 2007 through July 2009, when one FED was open. Period C was August 2009 through February 2012, when two FEDs were open. Period D was March 2012 through August 2013, when three FEDs were open (Table 1). The Institutional Review Board approved this study.

Data Analysis

Monthly insurance percentages were determined for the main ED and FEDs from July 2006 through August 2013. A total of 211,161 encounters were examined.

Monthly payer percentages were also determined for the control data from July 2006 through June 2007. χ^2 was used to evaluate insurance type over the four time periods.

RESULTS

The number of patients and insurance type for all EDs open in each time period were compared in Table 2. We found that overall for the health care system, self-pay and Medicare decreased slightly while private pay patients remained stable and Medicaid patients increased. We also compared all possible pairs of time periods using χ^2 test. The results revealed insurance type was different in the entire system across all time periods, and this was statistically significant ($p < 0.001$).

Table 2. Total Number of Patients and Insurance Type for the Entire System in Each Time Period

Insurance Type			
Self-Pay	Medicaid	Medicare	Private
11,869 (0.1960263)	9,570 (0.1580564)	16,260 (0.2685473)	22,849 (0.3773700)
18,603 (0.1216518)	23,395 (0.1529885)	40,504 (0.2648705)	70,418 (0.4604891)
18,640 (0.1348604)	26,901 (0.1946287)	32,988 (0.2386682)	59,688 (0.4318427)
28,622 (0.1818817)	31,329 (0.1990837)	39,209 (0.2491580)	58,206 (0.3698766)

Values in parentheses represent the proportions in each time period.