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# Exploring Health Insurance Status and Emergency Department Utilization

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## Abstract

Emergency department (ED) use, by both insured and uninsured, leads to significant health care costs in the United States. While frequent ED use is often attributed to the uninsured, there is some evidence that insured populations also report utilizing the ED when otherwise preventable or nonurgent. We conducted in-person surveys of patients visiting the ED at a large research hospital and examined the differences in their characteristics based on the health insurance status. While less than the uninsured, insured individuals still report barriers to access to care outside the ED that include lack of access to another health care facility and unavailability of a doctor's office or clinic.

## Keywords

access to care, emergency visits, primary care, survey research, insurance

## Introduction

Emergency department (ED) use leads to significant health care costs in the United States. The Centers for Disease Control and Prevention reported 129.8 million visits to US EDs in 2010.<sup>1</sup> It is evident from previous research that the availability of public insurance among low-income adults impacts health care services utilization, including ED visits.<sup>2,3</sup> One goal of The Patient Protection and Affordable Care Act (ACA) of 2010 was to reduce the burden on EDs and increase access to care through insurance coverage. Increased health insurance coverage through Medicaid expansions and health insurance exchanges (both implemented through ACA in January 2014) may significantly impact ED utilization nationwide by reducing the number of uninsured. It may take several years before the impact of ACA on utilization of health care services can be measured, and it is essential to begin collecting baseline data now. While much focus is usually on the uninsured, it is also possible that the insured are highly contributing to ED costs which would indicate the potential for a moderate long-term impact of the ACA. This pilot study was conducted to gather information about ED utilization by both insured and uninsured at a pre-ACA time point.

Previous studies have reported factors such as limited office hours, lack of physician availability, increased waits times, lack of transportation, and usual source of care are

associated with increased ED visits.<sup>4,5</sup> Examination of the characteristics of the patients visiting the ED is important. In addition to health insurance marketplaces, which are present in all 50 states (operated by the federal government, established as partnerships, or state-based), states' also have the option of increasing access to care through expanded Medicaid which may significantly impact ED utilization. Finally, it is important to not only analyze secondary data to understand the causes of ED utilization (or over utilization), but patients themselves can provide important context and information as to *why* they seek treatment at the ED instead of other available sources. The patient context can be best understood through primary survey collection.

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## Methods

### Study Design

A paper-based survey was administered to ED patients from August through December 2013, before the beginning of enrollment in health insurance exchanges and Medicaid expansion under ACA. Information about the characteristics of insured and uninsured individuals was collected. The study protocol and all the procedures were approved by the (West Virginia University) Institutional Review Board as protocol #1308070959. The study sample included individuals who visited the ED, were 18 years of age and older, and were conscious and considered competent to answer survey questions ( $n = 185$ ).

### Setting

The survey was administered in a large public research hospital with 461 beds. The hospital serves a statewide population as well as pulling patients from several nearby states.

### Procedure

Surveys were administered by trained study personnel during several rotating shifts. Study personnel approached all patients in the ED who fit sampling requirements mentioned earlier. After receiving respondent's verbal consent to participate, a paper-based survey was provided to them. The respondent themselves or study personnel could record answers depending on the preferences and abilities of the patient. Completed surveys were collected by the study personnel. At certain times when the study personnel were not available to collect the surveys in person, respondents placed completed surveys in locked boxes. Data were double-entered utilizing SPSS Data Builder 4.0.

### Measures

Several survey measures were collected from already established and validated surveys including the National Health Interview Survey (NHIS) and the Primary Care Brief Assessment Tool.<sup>6</sup> The survey captured information related to reason of ED visit, usual source of care, insurance status, frequency of ED visit in last 12 months, and frequency of ED visits due to affordability of other health care options. Additionally, information was collected about referrals to the ED by a provider including if a referral took place, type of provider, and whether the referral was made for this particular ED or the nearest geographically.

Information about insurance status was captured with the question "What is your health insurance status?" The responses included public (Medicare, Medicaid, and CHIP), private, veteran's health care (VA, military health, tricare, and CHAMPUS), no insurance, and any other type of insurance. To capture information about the reason for the ED visit, respondents were asked a question from NHIS, "Tell me which of

these apply to your emergency room visit today." The responses included "(1) You didn't have another place to go, (2) Your doctor's office or clinic was not open, and (3) Only a hospital could help you." Additional information was collected by asking "How many times over the past 12 months did you go to the emergency room?" and "How many of these emergency room visits were because you could not afford to go somewhere else such as primary care physician or practice or urgent care clinic?" Further, the respondents were asked "Before your visit to the emergency room today, did you call or visit your medical care provider?" Respondents could answer "Yes" or "No" for this particular question. Demographic information was also collected.

### Statistical Analysis

Frequency distributions are reported using valid percentage values. Chi-square tests were conducted to measure the differences in the characteristics of ED utilization based on insurance status. Stepwise logistic regression with forward selection were conducted to examine the relationship between insurance status of the respondents and other characteristics such as race, marital status, education, usual source of care (physician's office), reason for ED visit, and contact with medical provider before visiting the ED. Stepwise logistic regression with forward selection was also performed to examine the relationship between ED visits (ED visits vs no ED visit in past 12 months) due to the lack of affordability of other options and characteristics of the survey respondents, that is, race, marital status, education, health insurance status, physicians' office as usual source of care, reason for ED visit, and contact with medical provider before visiting the ED. Statistical significance for all measures was established at  $P < .05$ , and all analyses were conducted using Statistical Analysis Software (SAS) version 9.3.

## Results

Approximately, one-third of the insured patients visited the ED even though hospital wasn't the only place that could help them. Almost half of them did not call or visit a medical provider, and one-third said that the ED was usual source of care for them. Table 1 presents unadjusted differences in the characteristics of health care utilization based on insurance status. Significant differences were observed between uninsured and insured with respect to race, marital status, education, and household income ( $P < .05$ ). Insured patients were significantly more likely to use a physician's office as their usual source of care. Insured patients were significantly more likely to visit the ED as only a hospital could help them ( $P < .05$ ). They were more likely to call or visit their medical provider before visiting the ED ( $P < .05$ ) and claim that they were referred to the ED by their medical care provider ( $P < .05$ ).

The survey also yielded results (not presented in Table 1) related to affordability and health care utilization. Patients who reported using a physician's office as their usual source of care

**Table 1.** Characteristics of the Emergency Department Study Sample by Health Insurance Status.<sup>a</sup>

	No Insurance (17.2%)	Yes Insurance (82.8%)	P Value
Age			.098
18-44 years	76.9	59.7	
45+ years	23.1	40.3	
Gender			.713
Male	48.2	44.3	
Female	51.9	55.7	
Race			.029 <sup>b</sup>
White	84.6	96.8	
Nonwhite	15.4	3.2	
Marital status			.022
Married	19.2	43.3	
Not married	80.8	56.7	
Education			.026
Less than college	65.4	41.6	
College or more than college	34.6	58.4	
Employment status			.876
Employed	54.5	52.8	
Not employed	45.5	47.2	
Household income			< .01 <sup>b</sup>
Less than US\$25 000	82.6	39.8	
US\$25 000 or more than US\$25 000	17.4	60.2	
Usual source of care			
Clinic	35.7	36.0	.975
Physician's office	32.1	65.4	.001
Emergency department	50.0	32.4	.075
Outpatient	7.1	1.5	.136 <sup>b</sup>
VA	3.6	1.5	.432 <sup>b</sup>
Reason for ED visit today			.051 <sup>b</sup>
You didn't have another place to go	36.0	15.3	
Your doctor's office or clinic was not open	16.0	15.3	
Only a hospital could help you	48.0	69.5	
Call or visit medical provider before visiting ED			.035
No	77.8	55.6	
Yes	22.2	44.4	
Referred to the ED by a medical provider			.004
No	77.8	47.4	
Yes	22.2	53.6	
Of those referred, Type of medical provider that referred to ED			.171 <sup>b</sup>
Primary care	16.7	43.3	
Specialist	50.0	19.4	
Other	33.3	37.3	
Of those referred, Were told to come to this ED or nearest ED			.646 <sup>b</sup>
This one	71.4	78.6	
Nearest	28.6	21.4	

Abbreviations: ED, emergency department; VA, veteran affair.

<sup>a</sup>n = 185.

<sup>b</sup>Due to low cell sizes the significance is reported using Fisher's exact chi-square tests.

were significantly less likely to be uninsured than others (odds ratio [OR] = 0.23, 95% confidence interval [CI] = 0.08-0.69). The ED visits in past 12 months were positively correlated with the lack of affordability of other health care options,  $r(87) = .71, P < .0001$ . Health insurance status (insured vs uninsured) was negatively correlated with ED visits in past 12 months due to affordability of other options,  $r(81) = -0.43, P < .0001$ . Insured were significantly less likely to visit ED in past 12 months because they could not afford to go somewhere else such as primary care physician practice or urgent care clinic (OR = 0.02, 95% CI = 0.00-0.13).

## Discussion

Although the uninsured reported more frequent ED usage, the insured have a somewhat surprising finding. In our study, 30% of visits to the ED by insured patients are associated with the lack of another health care facility to go or unavailability of a doctor's office or clinic. Thus, even among those with insurance, nearly one-third of the visits may have been treatable outside an ED setting. This finding is consistent with other research showing Medicaid patients often visit the ED, as they find difficulty in accessing the physician's office or experience delays in receiving appropriate care.<sup>7</sup> Individuals with better access to primary care report less ED visits and unmet health care needs irrespective of their insurance status.<sup>3,8</sup> The results indicate the importance of further exploring use of the ED by the insured population, especially those who report the ED to be their "usual source of care." It may be important to explore ways to triage patients to other health care settings (eg, primary care doctors, clinics, and urgent care facilities) from the ED based on severity of the disease condition for which they are seeking care.

These findings indicate that individuals, even when insured, may not know how to fully navigate the health care system or perhaps that the health care system is not providing care in settings or times that are accessible to all patients. Barriers mentioned in the Introduction section including limited office hours, lack of physician availability, increased wait times, and lack of transportation may not be solved simply by access to health insurance.

We would also like to mention certain limitations. As a pilot study, this was conducted only in 1 ED using a convenience sampling technique, therefore, the results from the study may not be representative of all populations. Results could be limited due to seasonality. All results are self-reported and suffer from the same limitations as other self-report surveys. The survey instrument did not collect information related to patient health literacy which prevents us from further exploring those themes. Due to missing values within the sample, we could not predict the factors (such as income) attributable to ED visits in last 12 months. Longitudinal studies are required in future to examine the impact of ACA on ED utilization.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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### Author Biographies

**Parul Agarwal**, a PhD candidate at the West Virginia University (WVU) School of Pharmacy is completing her dissertation on factors and outcomes associated with emergency department utilization among Medicaid beneficiaries. She works as Graduate Research Assistant in the Health Research Center on the WV Insurance Exchange Evaluation grant.

**Thomas K. Bias**, an Assistant Professor in the WVU School of Public Health, Department of Health Policy, Management, and Leadership, leads an interdisciplinary research team including the WVU Health Research Center and public health, economics and marketing specialists.

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**Louise Moore**, is a Registered Nurse with an Associate of Science Degree in Nursing. She works with the Health Research Center on the WV Insurance Exchange Evaluation and the Community Transformation Grant.

**Stephen Davis**, is associated with the Department of Emergency Medicine, WVU School of Medicine. His research interests include community based emergency medical services and prescription drug abuse.

**Danielle Davidov**, an Assistant Professor in the Department of Emergency Medicine WVU School of Medicine. Her research interests include intimate partner violence and violence prevention.