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The Impact of the Affordable Care Act on Primary Care Treatability of Emergency Department Visits

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#### **Authors**

Walls, L.  
Markossian, T.  
Probst, B.  
[et al.](#)

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## 1 Evidence for Social Disparities in Emergency Department Hallway Bed Assignment

DA Kim, IP Brown/ Stanford University, Department of Emergency Medicine, Palo Alto, California

**Objective:** Hallway beds in the emergency department (ED) lead to lower patient satisfaction, and may be associated with inferior care. Our objective was to determine whether socioeconomic factors influence which patients are assigned to hallway beds, independent of patients' clinical characteristics at triage.

**Methods:** We performed a retrospective analysis of 96,650 visits to a large academic ED's adult acute care area in 2013-2016. For each visit, we observed patient age, sex, race, and insurance status (i.e., Medicaid, Medicare, private insurance), as well as time and date of arrival, illness acuity level at triage, and final diagnosis. In a series of logistic regression models, we estimated the effects of patients' insurance status and race on the likelihood of their being assigned to a hallway bed, controlling for time and day of arrival, illness severity, and patient characteristics at time of triage. We also estimated a Cox proportional hazards model for the effect of hallway bed assignment on length of stay, controlling for triage acuity, age, sex, race, and time and day of arrival in the ED.

**Results:** Overall, 12.0% of adult acute care patients were assigned to hallway beds. At triage acuity levels 2-4 (98.6% of visits), Medicaid patients were more likely to be assigned to hallway beds, compared to patients with Medicare or private insurance. Patients assigned to hallway beds had significantly longer lengths-of-stay than roomed patients of the same acuity level ( $p < 0.05$ ). In logistic regression models controlling for age, sex, race, time and day of visit, and triage acuity, Medicaid status was associated with 44% greater odds of assignment to a hallway bed (odds ratio [OR] [1.44], 95% confidence interval [CI] [1.37-1.52]), compared to privately insured patients. Black patients were more likely than white patients to be assigned to hallway beds (OR [1.14], 95% CI [1.06-1.22]), but race alone did not account for the effect of Medicaid status on hallway bed assignment, and exhibited complex interactions with insurance status.

**Conclusion:** Our findings provide evidence for socioeconomic disparities in the use of ED hallway beds, and suggest process improvement measures to remedy them.

## 2 Opt-out Emergency Department Screening of HIV and HCV in a Large Urban Academic Center

A Ferdinand, E Ball, M Gilbert, P de Melo, B Kapur, M Anwar/ Jackson Memorial Hospital, Miami, Florida

**Objectives:** In 2011, Miami was found to have the highest rate of new HIV diagnoses in the country. Miami is now at the frontline of a crisis of HIV-related causes of death. Acute HCV infections

are also on the rise in Miami. Intravenous drug use, homelessness, high-risk sexual behavior, stigma related to the diseases, and influx of immigrants from high prevalence countries may be some of the causes for these statistics. Jackson Memorial Hospital (JMH) is an urban tertiary care center that serves 2.7 million residents of Miami-Dade County and provides care to those most at-risk for HIV/HCV. The populations served are largely uninsured, and use the emergency department as a primary means of healthcare. As a result, they may not receive routine screening for HIV/HCV or have access to treatment. We are performing non-risk based, opt-out, integrated, blood-based ED HIV/HCV screening to better characterize risk factors and actively link HIV and/or HCV-infected patients to expedite their access to care and services.

**Methods:** Opt-out, HIV Ag/Ab and HCV Ag testing was performed on all patients who required blood analysis for assessment of their presenting chief complaint. Patients who had a documented screening test within one year were excluded. Results were disclosed to patients appropriately.

**Results:** A total of 10,447 patients were screened between June 2017 and October 2017. 221 (2%) were positive for HIV and 505 (4.8%) were positive for HCV. Out of these, 269 had positive HIV RNA viral loads. Of those who tested positive for HIV, 21 (10.76%) were unaware of infection and 4 (2.05%) were acute infections. Coinfection was detected in 33 patients.

**Conclusion:** The percentages of HIV and HCV positive individuals in our patient population are higher than previously reported for Miami. The HIV prevalence at JMH was found to be more than twice the national average. Our HCV prevalence findings highlight the critical role EDs may serve in identifying patients with undiagnosed HCV infection. The demographic data for those positive for HIV and HCV correlate with those previously reported. Miami-Dade has high rates of intravenous drug use, high-risk sexual behavior, and homelessness, which are all known risk factors and likely contribute to the high prevalence of HIV and HCV that was identified. Thorough coordination and perseverance between multiple hospital departments, community resources, and local health departments to develop a customized treatment workflow for our patients is necessary to improve enrollment into treatment.

## 3 The Impact of the Affordable Care Act on Primary Care Treatability of Emergency Department Visits

L Walls, T Markossian, B Probst, M Cirone/ Loyola University Medical Center, Maywood, Illinois

**Background:** The Affordable Care Act (ACA) attempted to address rising health care costs by providing better access to primary care providers for non-emergent complaints. Studies measuring emergency department (ED) utilization before and after the enactment of the ACA have yielded mixed results.

**Objective:** To analyze how changes in coverage status from 2011-2016 as a result of the ACA impacted ED utilization, and determine which populations were more or less likely to use the ED for non-emergent purposes.

**Methods:** We compared changes in the severity of ED visits and sociodemographic factors at an academic and community hospital to analyze longitudinal trends pre- and post-ACA. We used poverty level of the zip code of residence as a proxy for patient level socioeconomic status (SES). Patients were categorized as high ( $\leq 9.9\%$  of households below poverty), intermediate (10.0-19.9%), or low ( $\geq 20.0\%$ ) SES. We measured ED severity according to the validated Ballard algorithm. Multi-level logistic regression was employed to determine whether the probability of having a non-emergent ED Visit changed after the ACA. We defined the pre-ACA period as January 1, 2011-December 31, 2013, and the post-ACA period as April 1, 2014-December 31, 2016. We excluded ED visits that occurred from January 1, 2014-March 31, 2014 due to uncertainties about coverage status as insurers adjusted to the new ACA regulations.

**Results:** Our results showed that a lower proportion of ED visits were non-emergent post-ACA compared to pre-ACA ( $p < 0.001$ , 95% confidence interval [CI] [0.72-0.75]). Compared to insured patients, uninsured patients showed a 1.12 fold increase in odds of having a non-emergent visit to the ED ( $p < 0.001$ , 95% CI [1.08-1.16]). Compared to white patients, black patients had a 1.39 fold increase in odds ( $p < 0.001$ , 95% CI [1.34-1.44]) and Asian patients had a 1.14 fold increase in odds of having a non-emergent ED visit ( $p < 0.02$ , 95% CI [1.03-1.27]). Compared to non-Hispanic patients, Hispanic patients showed a 1.77 fold increase in odds ( $p < 0.001$ , 95% CI [1.71-1.84]). Compared to patients in the high SES category, patients with an intermediate SES had a 1.16 fold increase in odds of visiting the ED for a non-emergent reason ( $p < 0.001$ , 95% CI [1.12-1.19]).

**Conclusion:** Our results suggest a lower proportion of ED visits were non-emergent after implementation of the ACA. However, some patient populations remain at risk for ED overutilization for non-emergent needs.

## 4 Association Between Race/Ethnicity & Wait Time in Adults Presenting With Emergent vs Urgent Symptoms

K Parmar<sup>1</sup>, M Aboabdo<sup>1,2</sup>, C Madhwani<sup>1,3</sup>, G Castro<sup>4</sup>, PR Dela Vega<sup>4</sup>, JR Pelaez<sup>4</sup>, M Varella<sup>4</sup>, J Zevallos<sup>4</sup>/ <sup>1</sup>Windsor University School of Medicine, Cayon Saint Kitts and Nevis, West Indies; <sup>2</sup>Royal College of Surgeons in Ireland, Adilya, Bahrain; <sup>3</sup>Smt. Kashibai Navale Medical College, Pune, India; <sup>4</sup>FIU Herbert Wertheim College of Medicine, Miami, Florida

**Objectives:** Evidence suggests that increasing wait times in the emergency department (ED) leads to detrimental health outcomes. Specific race/ethnic groups were shown to have varying wait times, which could lead to health disparities. We seek to determine

whether there is an association between race/ethnicity and wait time on the bases of emergent and urgent presentation in ED.

**Methods:** We performed analysis of adult participants of the 2012-2014 National Hospital Ambulatory Medical Care Survey (NHAMCS) who arrived at the ED presenting with selected emergent (chest pain/shortness of breath) or urgent (abdominal pain/back pain) symptoms. Independent associations were assessed using logistic regression models. Stratification by emergent and urgent symptoms of presentation was performed to examine potential effect modification.

**Results:** We studied 9396 patients, of which 60% were Non-Hispanic whites, 22% were non-Hispanic blacks, 15% were Hispanics and 3% were other races. Overall, 47% of non-Hispanic blacks waited for  $> 30$  minutes compared to 38% of non-Hispanic whites. In the stratified adjusted analysis, among participants with emergent symptoms, non-Hispanic blacks had significantly higher odds of waiting  $> 30$  minutes as compared to non-Hispanic whites (odds ratio [1.58], 95% confidence interval [1.10-2.27]). This association was not significant for the non-Hispanic blacks presenting with urgent symptoms. No differences were found for the other race categories.

**Conclusion:** Our findings suggest that there are disparities in waiting times according to race/ethnicity. Compared to non-Hispanic whites, non-Hispanic blacks are more likely to have longer waiting times when presenting with emergent symptoms at EDs across the United States.

## 5 Trends of Freestanding Emergency Department Visits in Florida

BR Christian, JM Gleason, C Dowdye/ Ross University School of Medicine, Dominica, West Indies

**Objectives:** Little is known about the characteristics of freestanding emergency department (FSED) visits. Proponents of FSEDs cite potential benefits including lower cost, waiting time, reduced overcrowding in traditional EDs, and overall convenience. However, previous studies on emergency care access and expenditure have suggested that increased access to emergency care may lead to an increase utilization of emergency departments for lower acuity patients, resulting in higher overall health care expenditures. The objective of this study is to examine trends of FSED visits.

**Methods:** Publicly accessible statewide emergency department (ED) data during years 2014-2016 were collected. Total FSED visits per quarter were plotted. Trends in total visits, top diagnoses treated, and average charges of those conditions were noted.

**Results:** Total FSED visits in 2016 has more than doubled (203%) from total FSED visits in 2014. FSED visits have captured increasingly more of all ED (traditional ED and FSED)