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Trends of Freestanding Emergency Department Visits in Florida

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**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

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**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

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**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)

visits statewide, comprising 3.3%, 4.5%, and 6.1% of total ED volume during 2014-2016, respectively. The most common treated condition of FSED visits is “Injury and Poisoning” (~25% of total FSED visits) compared to “Signs, Symptoms, and Ill Defined Conditions,” which is ~22% of total traditional ED visits. Regarding all years examined, FSEDs had lower average costs for each of the ED’s top three treated conditions: “Injury and Poisoning” \$3,679 vs \$4,745; “Signs, Symptoms, and Ill Defined Conditions” \$5,822 vs \$7,888; “Diseases of the Respiratory System” \$2,821 vs \$3,370. The price difference between the top three treated conditions has remained relatively stable in the years examined.

**Conclusion:** The emergence of newly built FSEDs has many implications for how they will impact traditional EDs and care of patients. Considering that the most common condition treated during visits to FSEDs in Florida is “Injury and Poisoning,” such facilities should be equipped and staffed accordingly to handle this condition. The cost of FSED visits are consistently lower than traditional ED visits throughout the years examined; this is different from FSED visits in Texas where their costs have become comparable to traditional EDs. Continued monitoring of FSEDs is warranted particularly with factors affecting costs and its ability to affect traditional EDs’ volume.

## 6 One Last Shot: Self-Inflicted Firearm Violence in Trauma Centers in 2012-2013

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**Objectives:** Intentional self-harm (suicide) is a growing problem in the United States and is one of the top ten leading causes of death. Our objective is to compare the presentations and outcomes of victims of self-inflicted gunshot wounds (SIGSW) by handguns versus other types of firearms. Additionally, we compare the presentations and outcomes of victims with head/face injuries to other regions of the body.

**Methods:** We performed a retrospective analysis of data from the National Trauma Database of all patients who presented to registered trauma centers between 2012 and 2013. Categorical data included patient characteristics upon presentation and outcomes which were compared between patient’s with handgun injury versus shotgun, hunting rifle, and military firearms using the Chi-Squared test. Continuous data were analyzed through the Mann-Whitney U test. Additionally analysis of head and face injuries versus other bodily injuries were compared between the handgun group versus shotgun, hunting rifle, and military firearms group using Chi-squared test.

**Results:** There were a total of 7828 SIGSWs from the NTDB data. Males accounted for 6600 (84.3%) patients and females accounted for 1228 (15.7%) patients. Of the total number of SIGSWs, 78% (6115) were white. Handguns accounted for 5139 patients and 1130 were due to shotguns, hunting rifles, and military firearms. There were 1405 SIGSWs due to all other types of guns not identified.

Patient’s in the handgun group were statistically more likely to be older than 55 years, be hypotensive (systolic blood pressure < 90) upon arrival in the emergency department, have a lower GCS score, test positive for illegal drugs, use prescription drugs, sustain GSW to head, be admitted to the ICU, have a shorter length of stay, and expire in the emergency department.

When comparing those who had head and facial injuries (4799) to those who had injuries to other bodily regions (3028), those who sustained head and facial injuries were statistically more likely to be male, use handguns, be hypotensive, have a lower GCS score, test positive for alcohol but be less likely to test positive for illegal and prescription drugs, be admitted to the ICU, expire in the emergency department, and have an higher overall mortality.

**Conclusions:** In this retrospective cohort study, we were able to demonstrate several differences between patients with handguns that are involved in SIGSW versus those that use other types of firearms. It is hoped that this information could be used to better understand those who are particularly vulnerable to SIGSW. Future studies can use this information to develop educational and prevention programs.