

## Frequent Use of Emergency Medical Services in Florida

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**Introduction:** The Florida Emergency Medical Services Tracking and Reporting System (EMSTARS) indicated that there were approximate 2.7 million incidences in the year of 2016. While EMS is developed to provide emergency medical care for patients with serious illness or injury caused by an incident, EMS system abuses widespread in the U.S. Frequent use of emergency services is associated with high healthcare costs and may indicate challenges accessing, or poor outcomes of, healthcare. To enhance healthcare utilization, related health outcomes, and cost effectiveness, research is needed to understand frequent users of EMS and to support the development of targeted interventions to improve population health.

**Objective:** We investigated patient demographics and health factors related to frequent use of EMS services of Florida in 2016.

**Method:** We reviewed records from the Florida EMSTARS database in 2016. Social Security Number (SSN) (if available) and first name/last name (SOUNDEX recoded) were used to identify unique patients/individuals. For records that did not have a valid SSN, first name/last name, date of birth, gender, race and ethnicity were used to identify individuals. Frequent use was defined as six or more EMS incidents in the 1-year period. Analyses were performed to investigate differences in demographics and health problems of frequent EMS users compared to non-frequent users.

**Result:** There were approximate 2.34 million (9-1-1 calls) records in the 2016 EMS data system, of which about 1.8 million (study sample) had sufficient information to identify individuals. In the study sample, EMS users had a range of 1-271 incidents during the observation period. Even though, the frequent users (six or more incidents) only accounted for 1.75% of the total patients, they accounted for 11.51% of total EMS incidents (average count of incidents for frequent user is 9.65) in the study period. Frequent users, as compared to the non-frequent users, were somewhat more likely to be male (46.84% vs. 44.24%), white (63.07% vs. 57.01%) and between 46-65 years old (approximate 19% vs. 13%); all differences were significant.

Among the frequent users, the most reported condition (from primary impression) was “Other, Non-Traumatic Pain” (34% of all conditions); it was listed as a primary impression more than twice as often than among non-frequent users (15.97%). Frequent users compared to non-frequent users had significantly lower levels of trauma related incidents (9.54% vs. 23.75%), stroke (0.77% vs. 1.43%), and cardiac arrest (0.19% vs. 1.14%). Of health problems, frequent users indicated a higher level of behavioral problems compared to non-frequent users including “Behavioral/Psychiatric Disorder” (4.19% vs 3.78%) and “Alcohol Related Problems/DTs” (1.19% vs. 0.62%). Frequent users compared to non-frequent users also had higher levels of

select chronic conditions (such as diabetes: 2.90% vs. 1.99%, respectively and seizure: 3.73% vs. 2.82%, respectively).

Conclusion: This study revealed the demographic distributions and health conditions of the frequent users of EMS. These results suggest the need of public health effort to improve access and utilization of preventive services to improve population health outcomes and reduce emergency services costs. The study demonstrates the value of EMS patient data in identifying health services abuse, and provides guidance on intervention to enhance healthcare utilization, related health outcomes, and cost effectiveness.