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HIGH-FREQUENCY USERS OF EMERGENCY DEPARTMENT CARE

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□ **Abstract—Background: The heterogeneous group of patients who frequently use the Emergency Department (ED) have been of interest in public health care reform debate, but little is known about the subgroup of the highest frequency users. Study Objectives: We sought to describe the demographic and utilization characteristics of patients who visit the ED 20 or more times per year. Methods: We retrospectively studied patients who visited a large, urban ED over a 1-year period, identifying all patients using the department 20 or more times. Age, gender, insurance, psychosocial factors, chief complaint, and visit disposition were described for all visits. Inferential tests assessed associations between demographic variables, insurance status, and admission rates. Results: Of the 59,172 unique patients to visit the ED between December 1, 2009 and November 30, 2010, 31 patients were identified as high-frequency ED users, contributing 1.1% of all visits. Patients were more likely to be 30–59 years of age (52%), stably insured (81%), and have at least one significant psychosocial cofactor (65%). Their admission rate was 15%, as compared to 21% for all other patients. Conclusions: High-frequency users are patients with significant psychiatric and social comorbidities. Given their small proportion of visits, lower admission rates, and favorable insurance status, the impact of high-frequency users of the ED may be out of proportion to common perceptions.** © 2013 Elsevier Inc.

□ **Keywords—frequent users; overcrowding; health services research**

INTRODUCTION

The well-described phenomenon of frequent Emergency Department (ED) use by some patients was highlighted in the recent health care reform debate as a possible target for cost saving, and as an exacerbating factor in ED crowding (1–7). ED crowding has reached a critical state, demonstrated by the ubiquity of ambulance diversion, patients leaving without being seen, and most alarmingly, resulting bad clinical outcomes (8–10). Meanwhile, frequent users were often assumed to be uninsured and clogging EDs in search of primary care. Frequent ED users, most commonly defined as patients with ≥4 visits/year, account for approximately 25% of all ED visits (11). Thus, ED recidivism is an important component of visit volume, one of a number of contributors to crowding.

Although frequent ED users represent a sizeable portion of all ED visits, a small but visible minority of patients use their EDs at much higher rates (1,5,12–15). This subgroup of high-frequency ED users, well known to Emergency Physicians, may qualitatively account for the prejudices held against sicker patients who require the ED with relative regularity (11). In one of the only analyses to isolate high-frequency ED users, Ruger et al. described patients with 20 or more visits per year (visit frequency was divided into five groups), of which

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there were 23 in a patient census of over 50,000 (6). The authors found these high-frequency users had lower acuity visits, were less likely to be insured, and were at greater risk of elopement compared to any other group of patients (6).

A number of institutions have reported programs to address social and medical needs of high-frequency users, but beyond a few studies, the group itself remains poorly defined (6,16–21). Here we present the results of a pilot study designed to further characterize this challenging population and bolster the data for what is, by definition, a small patient sample. Describing this population will inform future attempts to address the underlying medical or social determinants of high-frequency ED use.

MATERIALS AND METHODS

Study Setting and Design

The study included all ED visits over a 12-month period to a tertiary care medical center with 96,000 annual ED visits (with approximately 59,000 unique patients). The site is one of 13 EDs within an urban county of 1.5 million inhabitants. The study was approved by the center's Institutional Review Board.

This was an observational study with retrospective data collection. The primary objective was to provide descriptive demographic and utilization statistics for this group (see *Measures*). Secondary objectives included comparisons within the group (gender and insurance differences) and admission rates with non-high-frequency users.

Study Protocol

Using the ED's electronic data records, all pediatric and adult ED visits from December 1, 2009 to November 30, 2010 were queried. Frequency of visits was calculated for all of the institution's ED patients during the study period to demonstrate proportion of visits attributable to frequent users (≥4 ED visits/year) and high-frequency users (≥20 ED visits/year). High-frequency users were also identified from the 12 months before this study period to determine if membership in this patient group had changed. After the study sample was identified, a summary of each high-frequency user patient's visits during the study period was generated by database query. Chart review was then performed manually by the study authors to abstract data for predefined measures (see below), using the same records (triage, nursing notes, physician chart, billing data) in each case. Records were de-identified after chart abstraction but before analysis.

Table 1. Subject Demographics

Variable	Count	Frequency
Gender		
Male	15	48%
Age (in years)		
0–29	3	23%
30–59	16	52%
≥60	8	25%
Insurance source*		
Medicaid	21	68%
Medicare	9	29%
Uninsured	1	3%
Insurance stability†		
Stably insured	20	65%
Change of insurance	6	19%
Insurance lapse	4	13%
Uninsured	1	3%
Psychiatric history		
None documented	16	52
Mood disorders	9	29
Schizophrenia	3	10
Other psychiatric	3	10
Substance abuse		
Any	13	42%
None documented	18	58%
Housing status		
Domiciled	26	84%
Undomiciled	5	16%
Disposition (by visits)		
Discharges‡	618	58%
Incomplete visits	286	27%
Admissions	155	15%

* Insurance source at start of study.
† Indicates whether patient kept same insurance carrier throughout study period, changed carriers, lost insurance, or was never insured during study period.
‡ Including discharge to Psychiatry.

Measures

Demographics. Age and gender were coded as categorical variables. Age categories included: 0–29, 30–59, and 60 years and over. Insurance type and carrier information was obtained from billing data from a third-party vendor that serves the institution, and insurance plans were grouped into "Private," "Medicaid" (including regular and managed Medicaid plans), and "Medicare." All demographic variables are listed in Table 1. Race and ethnicity data are not recorded in the chart and, therefore, unavailable for analysis.

Psychosocial cofactors. Psychiatric illness, history of substance abuse, and homelessness were recorded if documented in the past medical, psychiatric, or social history, listed as a discharge diagnosis, or described in a psychiatry consultant note.

Chief complaints. A primary chief complaint was identified from the triage note for each visit. Each chief complaint was then mapped to one of 20 investigator-defined complaint categories based largely on expected