

# Administration of Emergency Medicine



## IDENTIFYING FREQUENT USERS OF EMERGENCY DEPARTMENT RESOURCES

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**Abstract—Background:** There is growing focus on frequent users of acute care resources. If these patients can be identified, interventions can be established to offer more consistent management plans to decrease inappropriate utilization. **Objective:** To compare a hospital-specific approach with a region-wide approach to identify frequent Emergency Department (ED) users. **Methods:** A retrospective multi-center cohort study of hospital ED visits from all 18 nonmilitary, acute care hospitals serving the San Diego region (population 3.2 million) between 2008 and 2010 using data submitted to the California Office of Statewide Health Planning and Development. Frequent users and super users were defined as having 6 to 20 and 21 or more visits, respectively, during any consecutive 12 months in the study period. Comparisons between community-wide and hospital-specific methods were made. **Results:** There were 925,719 individual patients seen in an ED, resulting in 2,016,537 total visits. There were 28,569 patients identified as frequent users and 1661 identified as super users, using a community-wide approach. Individual hospitals could identify 15.6% to 62.4% of all frequent users, and from 0.3% to 15.2% of all the super users who visited their facility. Overall, the hospital-specific approach identified 20,314 frequent users and 571 super users, failing to identify 28.9% of frequent users and 65.6% of super users visiting San Diego County EDs that would otherwise have been identified using a community-wide approach. **Conclusions:** A community-wide identification method resulted in greater numbers of individuals being identified as frequent

and super ED users than when utilizing individual hospital data. © 2014 Elsevier Inc.

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### INTRODUCTION

As fiscal resources continue to shrink and emergency department (ED) overcrowding rises, communities need to better pool resources to optimally improve care for patients in their community. One issue is that of ED frequent and super users who utilize a disproportionate share of acute emergency care resources (1). If these patients can be identified, hospital systems and other agencies can potentially intervene to offer more consistent management plans to reduce inappropriate or preventable ED utilization that might be occurring.

ED frequent and super users may have medical insurance, multiple chronic diseases, chemical dependence, and mental health issues (2–4). Many interventions targeting these types of ED patients focus on directing them to more appropriate resources in the community, including increased care coordination (5). Others have utilized health information technology to facilitate care transition to more appropriate follow-up and aftercare (6). However, finding these individuals in the community real-time while they are receiving care is difficult, and they are often overlooked when a community-wide approach is not utilized.

This study was approved by the UCSD Human Research Protections Program.

The purpose of this study was to compare a hospital-specific approach vs. community-wide approach in identifying frequent users of ED resources.

## METHODS

### Study Design

This was a retrospective multi-center cohort study of hospital ED visits from all 18 nonmilitary, acute care hospitals serving the metropolitan San Diego region (population 3.2 million) using data submitted to the California Office of Statewide Health Planning and Development (OSHPD). Data for this study were limited to ED utilization over a 3-year period between January 1, 2008 and December 31, 2010, which were available from OSHPD in two separate data sources.

### Study Population

The California Emergency Department data source includes visit-specific information for patients discharged from an ED (i.e., admissions resulting from an ED visit are not documented as an ED visit in this database); whereas, the California Inpatient Discharge data source was used to identify ED visits that resulted in an inpatient admission. Patients included in the inpatient discharge dataset who were admitted from an ED were extracted and merged with the ED discharge dataset to construct a complete ED utilization database. Patients without a valid patient identifier were excluded. This study was approved by the University of California San Diego Human Research Protections Program.

### Data Analysis

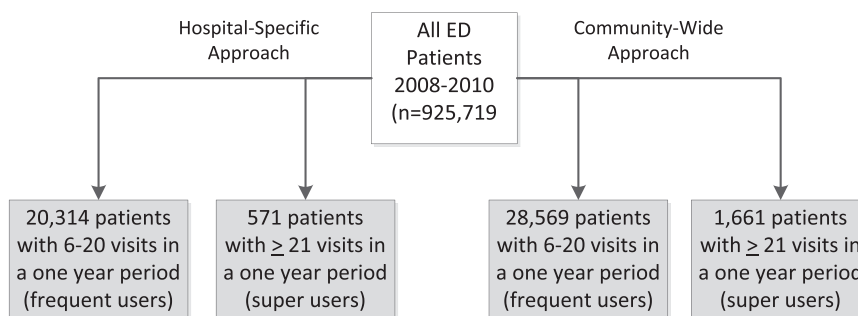
Classification of frequent and super users in this study was based on evaluation of patient and visit frequencies during the study period. Frequent users were defined as having 6 to 20 ED visits during any consecutive 12 months

in the study period. Super users were defined as having 21 or more ED visits over the same time period. Comparisons between community-wide and hospital-specific frequent user identification methods were made, and differences and 95% confidence intervals (95% CI) are presented.

## RESULTS

During the study period there were 925,719 individual patients seen in an ED, resulting in 2,016,537 total visits (patient identification is reported in Figure 1). Of these, 895,489 (96.7% of all patients) were identified as occasional users who were responsible for 1,592,453 of the visits (79.0% of total visits); 28,569 individual patients were identified as frequent users responsible for 333,648 of all ED visits (3.1% of patients resulting in 16.5% of all visits); and 1661 were identified as super users responsible for 90,436 visits (0.2% of patients resulting in 4.5% of all ED visits) using a community-wide approach. Most of these patients were seen in multiple hospital EDs (69.6% of frequent users and 97.2% of super users).

When community-wide data are not utilized, individual hospitals are limited to hospital-specific visits for identification of frequent users and super users presenting at their ED and are under-identified. Individual hospital identification is reported in Figure 2. Because patients use multiple hospitals, individual hospitals would have been able to identify only 15.6% to 62.4% of all frequent users and 0.3% to 15.2% of all the super users who visited their facility, of the total population that was actually identified by the community-wide approach. The mean difference in total number of patients identified (and 95% CI) between individual hospital and community-wide methods for frequent users and super users was 2699 (95% CI 1762–3635) and 505 (95% CI 334–674), respectively. Assuming we could combine and match individual hospital results, the hospital-specific approach would identify only 20,314 frequent users and 571 super users, failing to identify 28.9% of frequent users and



**Figure 1. Identification of frequent and super users of emergency department (ED) resources in San Diego County using community-wide and hospital-specific approaches, 2008–2010.**

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