Research letter

# Heavy users of emergency services: a population-based review

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Patients who make multiple visits to emergency departments (EDs) have been called "heavy users,"[1] "repeaters"[2] and "frequent fliers."[1] Previous studies have reported that such patients comprise 0.2%[3] to 11%[4] of the ED population and account for 1.9%[5] to 32%[4] of total visits. Heavy users have a high prevalence of psychosocial problems[6] and often have co-existing chronic medical conditions.[6–8] They are believed to account for a disproportionately large share of ED resource use,[1] and most ED staff perceive them to be a burden.[1,2]

Previous studies of this patient population are limited because they were conducted at single urban institutions.[1–5,7] A more complete picture of heavy ED users might help suggest programs to address their needs better. We therefore examined the patterns of heavy ED use in Ontario. The Ontario Health Insurance Plan (OHIP) billing database contains detailed information on all claims submitted by physicians remunerated on a fee-for-service basis. We obtained OHIP billing data for services provided in 175 of the province's 191 EDs between April 1997 and March 1998. We defined "heavy users" as people who visited the ED at least 12 times during the study period. In bivariate analyses we compared them with "non-heavy users," who made 11 or fewer visits in the same year.

In 1997/98, 2.16 million (19.1%) of Ontario's 11.3 million people made at least 1 visit to an ED. Total ED visits that year were 3.71 million (mean number of visits per person 1.72, range 0–345). Only 6839 (0.3%) of the people who visited EDs met the definition of heavy usage, but they accounted for 3.5% of the total number of visits (3.1% in academic centres, 3.2% in urban community hospitals and 4.4% in rural hospitals). Compared with non-heavy users, heavy users were more likely to be middle-aged, to be female, to present in the middle of the night and to use primary care, psychiatric and other specialist services (Table 1).

Multiple ED use was relatively uncommon among the heavy users. Most of the heavy users (68.7%) visited no more than 2 EDs, and most of their visits (82.9%) were to their most frequently visited ED. Only 609 of them received less than half of their care at a single institution.

This is the first study to examine heavy ED use across an entire province. Although small in numbers, heavy users are ubiquitous, in both rural and urban areas. One in 29 patients seen is a heavy user; thus, an emergency physician may expect to encounter a heavy user about once per shift.

The fact that heavy users usually return to the same ED may explain why ED staff perceive them to be a burden. Staff soon recognize them and become familiar with their complex, difficult-to-treat psychosocial problems. The advantage to planners of heavy users' loyalty to their primary ED, however, is that most heavy users can be identified by individual hospitals, and data-sharing agreements between EDs are unnecessary.

The lack of access to primary care was not found to be a major cause of heavy ED use, in contrast to the US experience.[1,2,9] The greater likelihood of heavy users receiving specialty referrals and psychiatric care, compared with the

**Table 1: Characteristics and use of emergency services by heavy users and non-heavy users in Ontario between April 1997 and March 1998***

| Variable | Heavy users *n = 6839* | Non-heavy users *n = 2.15 million* |
|---|---|---|
| **Demographic characteristic** | | |
| Age, yr; % of patients | | |
| < 25 | 18.6 | 40.2 |
| 25–64 | 62.2 | 45.2 |
| ≥ 65 | 19.2 | 14.6 |
| % female | 55.1 | 50.0 |
| **ED use per patient** | | |
| % of ED visits occurring between midnight and 7 am | 17.0 | 14.4 |
| Mean no. of ED visits | 18.9 | 1.7 |
| Mean no. of different EDs visited | 2.3 | 1.1 |
| Mean no. of office-based GP/FPs seen | 4.2 | 1.6 |
| Mean no. of specialist referrals by GP/FPs | 4.0 | 1.0 |
| Mean no. of psychiatry referrals | 0.6 | 0.04 |

Note: ED = emergency department, GP/FP = general practitioner/family physician.
*Heavy users were patients who made 12 or more visits in the study year, and non-heavy users were those who made 11 or fewer visits in the same year. All differences between groups were significant ($p < 0.001$).

non-heavy users, speaks to the complexity of their problems. Attempts to reduce the number of visits by heavy users will likely require a multidisciplinary approach involving community providers. Given the relatively small impact of this group on health care resources, the goal of any program should be to meet their complex needs better rather than simply to reduce utilization.

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