Frequent users of emergency departments

Do they also use family physicians' services?

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ABSTRACT

OBJECTIVE To determine whether frequent users of emergency department (ED) services use more or fewer primary care services than other ED patients.

DESIGN Population-based, observational, cross-sectional study.

SETTING Province of Ontario in 1997-1998.

PARTICIPANTS Frequent users of EDs, defined as people with at least 12 ED physician assessments yearly, were compared with those with one to 11 assessments yearly.

MAIN OUTCOME MEASURES Number of general practitioner and family physician (GP/FP) office visits and number of GP/FPs visited; diagnoses made during office visits; referrals by GP/FPs to specialists.

RESULTS Three quarters of frequent users of EDs visited GP/FPs at least six times yearly, and more than half visited at least 12 times yearly. Although frequent users of EDs saw many GP/FPs (4.2 vs 1.6 in the control group, $P < .001$), they received, on average, 73% of their primary care from the GP/FPs whom they saw most frequently. Frequent users of EDs also had more referrals to specialists (4.0 vs 1.0). Frequent users of EDs were more likely to live in low socioeconomic neighbourhoods and to be diagnosed with psychosocial conditions (24.1% vs 11.1%).

CONCLUSION Most frequent users of EDs have periodic contact with primary care physicians. Communication and coordination of care between EDs and primary care settings could be easier than anticipated, because in most cases, frequent users of EDs seek most of their care from one main ED and one primary care physician.

RÉSUMÉ

OBJECTIF Déterminer si les patients qui ont très souvent recours aux départements d'urgence (DU) utilisent les services de soins primaires plus souvent que les autres patients des DU.

TYPE D'ÉTUDE Étude d'observation de type transversal effectuée à partir d'une population.

CONTEXTE La province d'Ontario, d'avril 1997 à mars 1998.

PARTICIPANTS Les patients qui visitent très fréquemment les DU, soit ceux qui ont consulté des médecins de DU au moins 12 fois dans l'année, par rapport à ceux qui ont consulté de une à 11 fois

PRINCIPAUX PARAMÈTRES MESURÉS Nombre de visites à des cabinets d'omnipraticiens (OP) et de médecins de famille (MF) et nombre d'OP et de MF consultés; diagnostics posés lors de ces visites; nombre de patients dirigés vers un spécialiste par les OP et les MF.

RÉSULTATS Parmi ceux qui ont très souvent recours aux DU, les trois quarts consultent des OP et des MF au moins six fois par année, et plus de la moitié ont fait au moins 12 visites. Quoique les patients de ce groupe consultent plusieurs OP et MF, (4,2 contre 1,6 pour le groupe témoin, $P < .001$), ils reçoivent en moyenne 73% de leurs soins primaires de la part de l'OP ou du MF qu'ils visitent le plus souvent. Ils sont aussi plus souvent dirigés vers des spécialistes que les autres patients des DU (4,0 contre 1,0 fois). De plus, ils ont tendance à habiter dans des quartiers économiquement moins favorisés et à présenter des troubles d'ordre psychosocial (24,1% contre 11,1%).

CONCLUSION La plupart des patients qui utilisent fréquemment des DU visitent aussi régulièrement des médecins de première ligne. La communication et la coordination des soins entre les DU et les établissements de soins de première ligne pourraient être plus faciles à établir que prévu puisque, dans la plupart des cas, de ceux qui fréquentent souvent les DU consultent un DU principal et un médecin de première ligne.

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Cet article a fait l'objet d'une évaluation externe.
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The phrases "frequent fliers,"[1] "heavy users,"[2] and "repeaters"[3] have been used to describe patients who make many visits to emergency departments (EDs) in a given year. In Ontario, such patients account for 0.6% of those who visit EDs at least once a year, but 3.5% of all those who visit EDs.[4] Frequent users are believed to use a disproportionately large share of ED resources,[2,5-7] and hospital staff perceive them to add substantially to their workload.[1,7,8]

The current literature on frequent users of EDs demonstrates that such patients often suffer from a complex array of psychosocial problems,[9] which might compound chronic medical conditions.[1-3,9-12] They have higher rates of substance abuse[2,10,11,13] and are often perceived to be drug seekers.[8] Social isolation can contribute to their behaviour.[2,3,14] Munchausen syndrome, or factitious disorder, is often suspected,[8,15-21] yet these patients are also at higher risk of hospital admission and premature death.[14,17,21,22] Staff attitudes toward these patients have been reported to be negative,[1] perhaps reflecting the difficulty of addressing complex needs in an environment best suited to deal with acute, episodic illnesses.[1,3,7] The ironic term "frequent flier" likely reflects staff ambivalence toward these challenging patients.

Despite the interest in frequent users of EDs, we still know little about who they are, the causes of their patterns of use, and their effect on the health care system. One area of controversy is how access to primary care affects use of EDs. Do certain people seek many ED services because they do not have family physicians? Or do these people use great quantities of other health services as well? Some studies suggest the former,[3,17] while others the latter.[2,10] Most of the literature has reported on the United States, where EDs often provide primary care to uninsured patients.[5,9,11-14,18] Such studies might not be generalizable to countries with universal health insurance.

Having a comprehensive, population-based database offers a unique opportunity to examine frequent users of EDs in Canada. All 11.3 million residents of Ontario are enrolled in the Ontario Health Insurance Plan (OHIP). Physician claims data allow precise estimation of prevalence in the general population and contain information on how these patients use primary and specialist care outside EDs.

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METHODS

We obtained access to OHIP data through a comprehensive research agreement with the Ontario Ministry of Health and Long-Term Care. Detailed information was available on 94% of all physicians and 92% (175 of 191) of EDs participating in fee-for-service remuneration.[23] For each physician-patient encounter, the following information was recorded: patient's age, sex, and postal code of residence; date of service; type of service, inferred from the fee code used; institution where service occurred (if applicable); physician's specialty; and physician's main diagnosis. These data allowed identification of frequent users of EDs, the volume of GP visits and specialist referrals, and the number of different providers visited.

Census Canada provides detailed information on household income, unemployment, education, family composition, and proportion of immigrants for each enumeration area. A postal code conversion file was used to identify socioeconomic characteristics for the neighbourhood corresponding to each patient's postal code.

"Frequent users of EDs" were defined as patients who visited Ontario EDs and were assessed by physicians on duty at least 12 times between April 1997 and March 1998. No consistent definition exists in the literature; previous studies have used thresholds ranging from four[17] to 20[24] ED visits yearly, and some studies have not excluded ambulatory care clinic visits.[5] The choice of a threshold is ultimately arbitrary; we chose 12 because it is relatively conservative, erring on the side of identifying outliers in patient behaviour, and because the concept of a "monthly visit to the ED" can be easily recognized by ED physicians.

The control group, "infrequent users of EDs," was a 1% random sample of all patients who visited EDs between one and 11 times yearly (n = 21 380). Two-tailed *t* tests were used in bivariate analyses comparing the two groups.

RESULTS

As reported previously, 11.3 million people were living in Ontario at the time of the study; 2.16 million

(19.1%) made at least one visit to an ED during the year, and 6839 were frequent users of EDs (0.3% of all ED users).[4] As other research has found,[2,10,11,13,14,25] frequent users of EDs were more likely to be young to middle-aged adults living in disadvantaged neighbourhoods (**Table 1**).

Frequent users of EDs consumed more primary care services than control subjects. More than half saw a GP/FP at least 12 times yearly, and 78% visited a GP/FP at least six times per year (**Figure 1**). Only 4% made no visits to fee-for-service GP/FPs. Frequent users had an average of 1.4 hours of individual psychotherapy and mental health counseling from GP/FPs, compared with 0.2 hours in the control group. Frequent users also saw, on average, 4.2 different GP/FPs yearly compared with 1.6 in the control group (**Figure 2**). Among frequent users, however, an average of 73% of GP/FP office visits were to the GP/FP whom they saw most frequently (82% of visits among the control group).

A psychosocial condition or a neurologic disorder was listed as the main diagnosis for a higher proportion of GP/FP office visits among frequent ED users than among the control group (**Tables 2** and **3**). A lower proportion of visits were for minor respiratory infections, minor traumas, and obstetric care. Migraine headaches accounted for 64% of frequent users' office visits for neurologic disorders.

Table 1. Patients' socioeconomic and demographic characteristics: *All differences between frequent and infrequent users of EDs are significant to P <.001.*

CHARACTERISTIC	FREQUENT USERS OF EDS (N = 6839)	INFREQUENT USERS OF EDS (N =2 151 452)*
AGE (YEARS)		
<25	18.6%	40.2%
25-64	62.2%	45.2%
≥65	19.2%	14.6%
SEX		
Female	55.1%	50.0%
SOCIOECONOMIC CHARACTERISTICS OF PATIENT'S NEIGHBOURHOOD		
Average household income	$42 500	$51 200
Proportion with < grade 9 education	12.7%	10.7%
Proportion of immigrants	17.5%	22.1%
Proportion separated or divorced	15.1%	13.1%
Unemployment rate	7.1%	6.3%

Data from linkage between Ontario Health Insurance Plan, 1997-1998, and Census Canada 1996.
**In later tables, a 1% random sample of this population is used in calculations.*

Figure 1. Frequency of GP/FP visits yearly by frequent and infrequent users of emergency departments

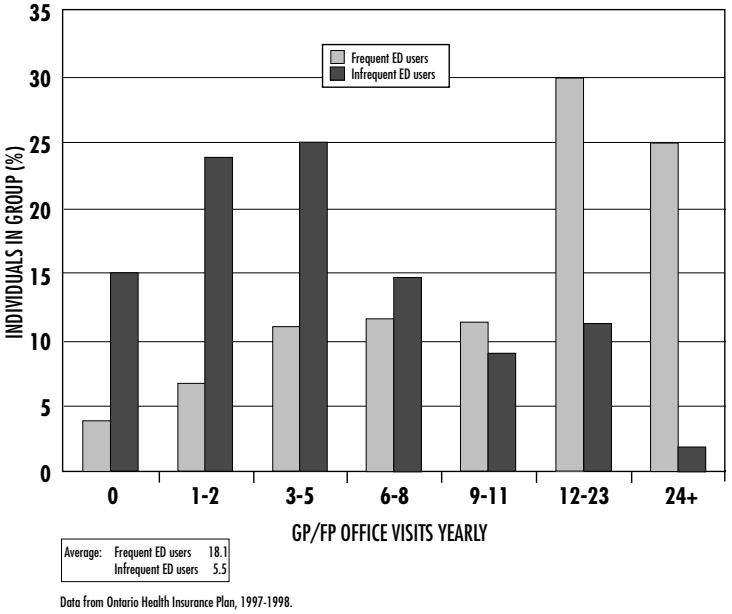
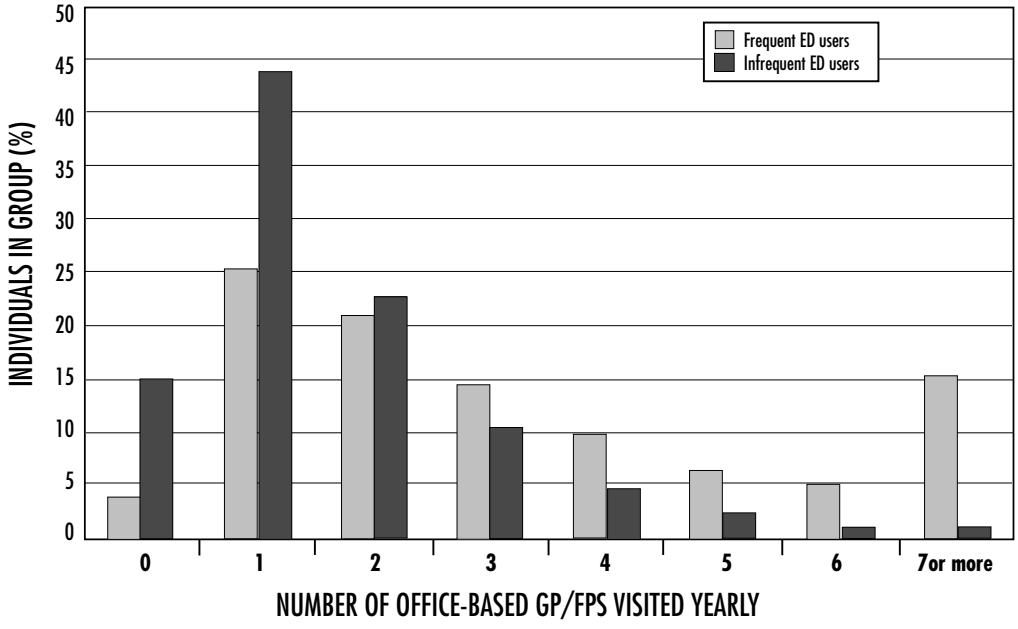


Figure 2. Frequency of visits to office-based GP/FPs yearly by frequent and infrequent users of emergency departments



Data from Ontario Health Insurance Plan, 1997-1998

Frequent users received more referrals to specialists by GP/FPs (4.8 vs 1.1; $P < .001$). **Table 4** lists the types of specialists consulted. Psychiatric services were particularly prominent: 23% of frequent users received at least one psychiatric referral, compared with 2.7% of control subjects (analysis not shown in table). Internal medicine and medical subspecialties also accounted for a higher proportion of specialist referrals among frequent users.

Emergency department physicians requested 61% of frequent users' specialist referrals. Only 8.9% of referrals were made by GP/FPs seen most frequently, while 21% were made by other GP/FPs and 8.7% by specialists. The corresponding figures for infrequent users were 45% by ED physicians, 17% by patients' regular GP/FPs, 29% by other GP/FPs, and 8.5% by specialists. Hence, frequent users of EDs were more likely to be referred to a specialist by an ED physician and less likely to be referred by their main GP/FP than infrequent ED users were (for all comparisons, $P < .0001$).

DISCUSSION

This study is a population-based examination of the relationship between use of primary care and frequent use of EDs. In the United States, where much of the literature on frequent use of EDs originates, inadequate access to primary care among the uninsured, indigent population is thought to be an important cause of frequent ED visits. This study, conducted in a public health care system with no copayments or deductibles, refutes this hypothesis. The fact that three quarters of frequent users visited GP/FPs at least six times a year suggests that nearly all of them have reasonably good continuing care with a primary care provider.

Only 4% of frequent users of EDs had no observable use of primary care services, and 11% had two or fewer GP/FP visits. These figures likely overestimate the number of frequent users of EDs with little or no primary care, because 5% of GP/FPs in 1997-1998 worked in either health service organizations or community health centres, which do not bill fee-for-service (unpublished data; available on request). The fact that community health centres often target their services to disadvantaged populations further supports the argument that this figure overestimates the number of frequent users of EDs without primary care.

Although frequent users encountered a greater number of different GP/FPs yearly than infrequent users, they displayed considerable loyalty to their usual primary care physician. This finding is consistent with our previously reported observation[4] that frequent users of EDs seek most of their care from the ED they visit most frequently. This finding is encouraging; it indicates that

these patients have one care provider who, in theory, is available to coordinate care for them. It also suggests that there are relatively few heavy users who deliberately wander between many GP/FPs and many EDs (for example, for the purpose of seeking multiple narcotic prescriptions from different providers).

Interestingly, frequent users tend to be referred to specialists by ED physicians more often than infrequent users, even though frequent users often have regular family physicians. This finding raises concern about continuity of care. One possibility is that physicians unfamiliar with the complex problems of frequent users are more inclined to refer than someone who knows the patient well, and who could have the results of previous consultations. Further research is needed to determine whether ED physicians could avoid some referrals through better communication with frequent ED users' regular family physicians.

Table 2. Diagnoses recorded during GP/FP office visits for frequent and infrequent users of EDs: *All differences between frequent and infrequent ED users were significant to P <.001.*

DIAGNOSIS	FREQUENT USERS OF EDS (% OF ALL GP/FP OFFICE VISITS)	INFREQUENT USERS OF EDS (% OF ALL GP/FP OFFICE VISITS)
Psychosocial conditions	24.0	11.1
Nervous system disorders	13.3	3.1
Eye, ear, nose, and throat disorders	1.3	3.2
Cardiovascular disorders or chest pain	8.0	11.2
Minor respiratory tract infections	6.6	14.9
Other respiratory disorders	4.9	5.0
Gastrointestinal disorders or abdominal pain	8.3	5.7
Genitourinary disorders	2.6	2.4
Obstetric and gynecologic conditions	2.4	5.0
Musculoskeletal disorders	10.3	9.9
Endocrine disorders	2.9	4.7
Skin disorders	2.8	5.1
Oncologic or hematologic disorders	3.1	3.6
Fractures, dislocations, and strains	5.0	9.1
Other poorly defined symptoms	2.6	2.9
Other	1.9	3.1
TOTAL	100.0	100.0

Data from the Ontario Health Insurance Plan, 1997-1998. One diagnosis is recorded each time a physician bills for a patient assessment.

Mental health care forms a substantial component of the primary care frequent users of EDs receive. These patients have more office psychotherapy and counseling, office visits for psychosocial conditions, and referrals to psychiatrists. They also tend to live in low socioeconomic neighbourhoods, which suggests (but does not confirm) that they have underlying economic difficulties as well. The combination of these factors highlights the complexity in these patients' lives.

Table 3. Specific diagnosis of psychosocial conditions recorded during GP/FP office visits made by frequent users of EDs

PSYCHOSOCIAL DIAGNOSES	FREQUENCY (%)
Anxiety disorders	42.8
Alcoholism	24.5
Schizophrenia	8.9
Drug dependence or addiction	4.4
Depressive or other nonpsychotic disorders	3.9
Personality disorders	3.5
Other psychoses (excluding schizophrenia)	2.8
Other	9.1
TOTAL	100.0

Table 4. Referrals by GP/FPs to specialists for frequent and infrequent users of EDs: *All differences between frequent and infrequent ED users were significant to P <.001.*

SPECIALTY	FREQUENT USERS OF EDS (% OF ALL REFERRALS)	INFREQUENT USERS OF EDS (% OF ALL REFERRALS)
Internal medicine and medical subspecialties	43.8	36.9
General surgery and surgical subspecialties	25.2	36.2
Psychiatry	13.4	3.5
Pediatrics	3.1	6.5
Obstetrics and gynecology	3.8	6.0
Dermatology	1.3	4.0
Other GP/FPs	6.0	3.8
Other	3.4	3.2
TOTAL	100.0	100.0

Data from Ontario Health Insurance Plan, 1997-1998.

Implications for administrators and policy makers

Many view frequent users of EDs and their behaviour as a problem, either of costly or inappropriate care, or of fragmented and inconsistent care. Others have argued that the problem is small and overly exaggerated and have cautioned against overreactions that could infringe on patient privacy or autonomy.[16] Malone[7] reviewed the issue from several perspectives: the biomedical premise stresses the patient as the causal agent of "inappropriate" use, while a public health premise would stress system inadequacies within society as a whole. The latter premise suggests that it is unhelpful to blame these patients for their pattern of use; programs should be directed to meeting their health needs, rather than just reducing costs or visits.

Because these patients have such complex needs and use the entire health care system, the solution to the problem identified in the ED likely lies outside of it. Comprehensive programs might be needed to address socioeconomic issues, substance abuse, and psychiatric or behavioural issues. From the ED's perspective, simply identifying who the frequent users are, writing "no narcotic" orders on their charts,[8] or sending letters to discourage repeat visits[22] are ineffective strategies, which fail to reduce visits and do not address patients' underlying problems.

From primary care physicians' perspective, developing an ongoing relationship with EDs might be critical for managing the complexity of these patients' problems, improving continuity of care, and directing patients to the most appropriate programs. Communication between care providers is a key component of a case-management approach, which is advocated by many analysts.[8,10,17,24,26] Our study suggests that bridging primary care and EDs could be easier than anticipated, because in most cases, frequent users associate themselves with only one principal GP/FP and one principal ED.

Limitations

Our study has several limitations. First, we were able to examine activity only within the fee-for-service system, thereby excluding 5% of GP/FPs and 16 of 191 EDs. Most of the 16 excluded EDs were in teaching hospitals, which could have introduced some bias toward community-based hospitals. Second, the OHIP database is designed for billing purposes and not for research and could contain inaccuracies in diagnosis and case identification. Such errors could result in a systematic overcounting or undercounting of certain diagnoses. There is no plausible reason, however, that the magnitude of such errors would be any different in the two study groups; consequently, comparisons between frequent and infrequent users should be valid. Third, there could be other reasons emergency visits are undercounted or overcounted. Indigent or homeless people might be eligible for health insurance cards, but might have either not applied for them or not have presented them to the ED, and hence would be underrepresented in the billing database.

Fourth, and most importantly, this study cannot comment on the appropriateness of either ED or primary care resources consumed by frequent users of EDs. Indeed, it is possible that even though frequent users have higher rates of primary care use, their access to primary care is insufficient, given the complexity of their problems.

Conclusion

Most patients who frequently visit EDs also have periodic contact with primary care physicians. The complexity of these patients' psychosocial needs represents a great challenge for clinicians. The

Editor's key points

- Published studies suggest that the lack of access to primary care services is an important cause of overuse of emergency services.
- This study in Ontario shows just the opposite, that three quarters of the patients who visit emergency departments frequently (12 or more times a year) also visit a family physician six or more times a year. Moreover, these patients receive 73% of their primary care from their main family physicians.
- The high frequency of diagnoses of psychosocial conditions and of referrals to specialists suggest that patients who visit emergency departments often have complex health problems.

Points de repère du rédacteur

- Les études publiées antérieurement suggèrent que le manque d'accès aux services de première ligne est une cause importante de surutilisation des services d'urgence.
- Cette étude descriptive ontarienne démontre au contraire que les trois quarts des patients qui consultent très fréquemment à l'urgence (12 fois par année ou plus) visitent un médecin de famille six fois ou plus par année. De plus, ces patients reçoivent 73% des soins primaires de leur médecin de famille principal.
- Les fréquences élevées de diagnostics psychosociaux et de références en spécialités suggèrent la présence de problématiques de santé complexes chez les patients consultant souvent à l'urgence.

opportunity to improve care through communication and coordination between EDs and primary care physicians is encouraging, because in most cases, frequent users of EDs seek most of their care from one principal ED and one primary care physician.

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Contributors

Drs Chan and Ovens were responsible for generating hypotheses, obtaining grant support, analyzing and interpreting data, and writing the article. Dr Chan was responsible for data gathering.

Competing interests

None declared

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