

Characteristics of frequent presenters to the emergency department: An analysis of 1 year data from an Irish Emergency Department.

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Abstract

Background: Considerable data exist on frequent presenters (FP) to the Emergency Department (ED) internationally. Despite the paucity of Irish literature many international studies have provided insight into the issue of FP. Many of such studies reveal that a small number of FP attending the ED account for a significant proportion of ED attendance. This paper aims to identify the characteristics of those patients who present frequently to the ED in an Irish Urban ED..

Methods: Data were gathered on all FP for a one year period (Jan-Dec 2012). A retrospective review of all ED admissions identified those patients who attended the ED >4 times within the one year. The data were analysed and cross tabulations and frequencies were displayed to describe the data set.

Results: A total of 28,184 patients made 31,551 ED attendances, 0.5% (n=152) were categorised as FP. 152 FP accounted for 4% (n=1231) of total ED attendance. 86% (n=130) FP made between 5 and 10 attendances to the ED, leaving 15% (n=22) of FPs making 10 or more visits to the ED. The median number of attendances was 6 (SD 6.799, range 5-78). The age of the FP population ranged from 19-94 (Median = 45.5, SD 18.422). 51% (n=77) of FP were male and 49% (n=75) were female. FP presented frequently to the ambulance service with almost 50% of total FP attendances arriving to the ED by ambulance. A total of 17% of FP attendance resulted from primary care referral. In this study FP were more likely to live with family than live alone.

Conclusion: The results of this study need to be interpreted cautiously. This was a retrospective study carried out on a single site. Further to this the data set is incomplete but is acceptable. The data disputes international literature^{1,2,5 and 7} which suggests that older males, better served by primary care are frequent ED presenters. This study has identified that while younger age groups are more likely to frequently attend the ED, gender plays no significant role on the FP population. This research also suggests that FP to the ED are more likely to be frequent users of the ambulance services.

The Emergency Department (ED) is a vital component of the wider health care system in any country. The primary goal of the ED is to deliver emergency care to patient populations presenting with surgical, medical and psychiatric conditions that require intervention in an attempt to halt immediate threats to life, prevent impairment and promote recovery. The process by which emergency care is delivered to the public constantly witnesses transformation and reform. The crisis of ED overcrowding has received considerable attention in recent years in Ireland and has witnessed reforms in service provision, development and management. With the recent restructuring of emergency departments the escalating problem of ED crowding is a growing concern.

Utilisation of emergency services has seen some level of increase in recent years and many studies have noted concerns with this increasing demand and the consequent problems of overcrowding in EDs.^{1,2} In Ireland, the total number of new ED attendances witnessed an increase 28% from the years 1994 to 2004 relative to population increase of less than 14% over the same period.³

Definitions of 'frequent presentations' to the emergency department vary extensively in the literature.¹⁻⁵ Key considerations in defining frequent presenters include: the frequency of presentations (i.e. the number of times a patient presented to an emergency department); the intensity of frequent patient use; other services used by the frequent patient (Ambulance Service, General Practitioner services etc); and the specific characteristics of the patients using such services (age, gender, health factors, GMS eligibility etc). Therefore, the definition of frequent presentations surveyed in this literature review range from as little as three visits up to twelve or more visits per annum.⁶⁻¹⁵

Despite the paucity of Irish literature many international studies have provided insight into the issue of FP's. Many of such studies reveal that a small number of FP's attending the ED account for a significant proportion of ED attendance. Typically these studies suggest that FP's can account for up to 8% of ED patients which can account for up to 25% of total ED attendances

A descriptor most commonly used to define 'frequent presentation' and one that appears repeatedly in the literature has been that of presentations >4 times per year.^{3,1,11,18.}

Very few articles relating specifically to Ireland were found during this search and most of the research stems from Australia and the United States, elements of who's systems are vastly different to the Irish Healthcare structure. This gap in literature coupled with growing ED demand provides justification for a review of the characteristics of FPs in Ireland. Furthermore FPs to the ED, have not been examined since the development of the Health Service Executive.

This study analysed 12 months attendance at the ED of a large city hospital. It aims to identify the demographic and attendance data of those patients categorised as FP.

METHODS

Description of data set.

This research took place at major teaching hospital in Dublin, Ireland. This hospital provides a range of acute, surgical and medical services to a dense population of approximately 290,000 people. The services offered by this site range from emergency services, psychiatric services, out-patient appointment, diagnostic and support services. Data on FP attendances were gathered with the use of the Symphony (ascribe Symphony) electronic data base. The Ascribe system in use within the hospital stores all patient data from check in to discharge. All adult patients (>19 years) attending the ED >4 times between January 1st 2012 until

December 31st 2012 were included in the study. Patients aged <19, those who presented 4 times or less in the 12 month period were excluded from the study. Data were collected on patient age, sex, living arrangement, eligibility for free health care (GMS eligibility) presenting complaint and method of arrival to the ED. This cohort comprised. The Manchester Triage System (MTS) was used to record presenting complaints. The MTS provides a list of presenting complaints with informative flow chart triage assessment. From this process it is envisaged the Triage Nurse (TN) with allocate a presenting patient with an illness classification and a clinical acuity level.

Data analysis

Data were entered into Excel and PASW v18 (Microsoft, San Diego, CA) for analysis, and descriptive statistics included frequencies and percentages. Variables were tested for normality using the Kolmogorov-Smirnov test. Relationships between variables were examined using correlation coefficients or the chi-squared test, as appropriate

RESULTS

Data was collected on 152 patients categorised as FPs who had attended the ED between January 1st 2012 and December 31st 2012. A total of 28,000 patients accounted for 31,551 attendances in the same year. Patients who attended the ED >4 times in the time period were categorised as FPs. Re-attenders are those patients who attended the ED >1 time in the same period. A total of 28,184 patients made 31,551 ED attendances, 0.53% (n=152) were categorised as FPs. These 152 adult FP accounted for 3.9% (n=1231) of total ED attendance. The majority (85.5% n=130) of FP made between 5 and 10 attendances to the ED, leaving 14.5% (n=22) of FPs making 10 or more visits to the ED. The median number of attendances for FP was 6 (SD 6.799, range 5-78).

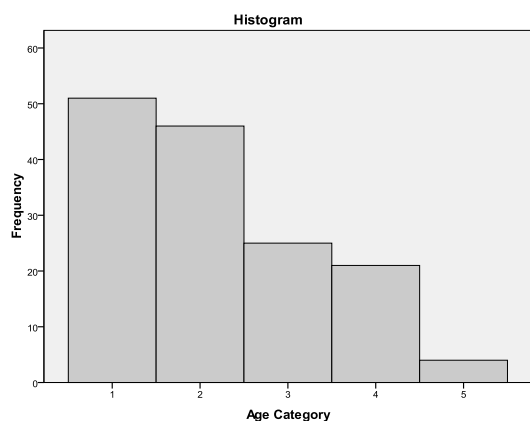
Gender and Age

The age of the FP population ranged from 19- 94 (Median = 45.5, SD 18.422). Increased ED attendance was positively associated with younger age groups. FPs aged ≤50 years accounted for 65% (n=99) of total FP attendance. FPs aged >50 years accounted for 35% (n=53) of FP attendance. Only 3% (n=5) of FPs were aged >80 years and a total of 18% (n=28) were aged 66 years or older.

The age category accounting for the highest ED attendance was those aged between 19-35 years. This group accounted for 34% (n=52) of attendances. The age category 36-50 closely followed and accounted for 31% (n=47) of attendances.

From the 152 FPs, 50.7% (n=77) were males and 49.3% (n=75) were female. The male also population accounted for 50.7% (n=625) of actual FP attendances. The female population accounted for 49.3% (n=606) of total FP attendances.

Males displayed a positive association with arriving by ambulance.



Age range	code
19-35	1
36-50	2
51-65	3
66-80	4
>80	5

Figure 1. Age category and Frequency of ED attendance

Methods of arrival

Of the total male attendances 40.6% (n=254) arrived by ambulance and 38.2% (n=239) self referred to the ED without prior medical consultation. The female population also showed significant association with ambulance arrival. Of the total female attendances 57.8% (n=351) arrived by ambulance while 21.4% (n=130) self referred. Males were almost 2 times more likely to self refer when seeking medical attention at the ED and females were more likely to utilise the ambulance service to access ED services.

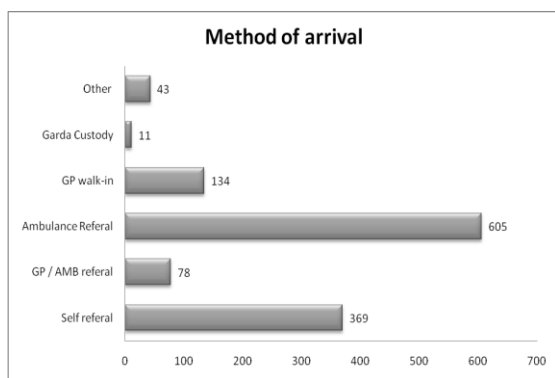


Figure 2. *Methods of arrival to the ED.*

Eligibility for free healthcare (GMS eEligibility)

On evaluation of eligibility for free health care 50% (n=77) were eligible for free health care. The FP who received access to free health care accounted for 51% (n=631) of total attendances. Closer analysis of method of arrival and access to free health care showed that both groups were more likely to arrive by ambulance.

A total of 49% (n=605) of FP attendances arrived by ambulance. Males accounted for 42% (n=254) of ambulance arrivals leaving females accounting for 58% (n=351). The FP who were eligible for health care 11% (n=132) of their cumulative attendance resulted from self referral. Of FPs who did not receive access to free health care 19% (n=237) of their cumulative attendance resulted from self referring.

Living arrangements

When the living arrangements of FP were examined, 40% (n=61) lived with family, 38% (n=57) lived alone, 13% (n=19) resided in residential care while data on 10% (n=15) FP was unknown.

Closer examination showed difference between sex and living arrangements of FPs. Of the 40.1% (n=61) who lived with family 50.8% (n=31) were males. When FPs who lived alone (n=57) were examined 50.8% (n=29) were female. 57.8% (n=11) of FPs who resided in care (n=19) were female. Females were more likely to live alone or in residential care.

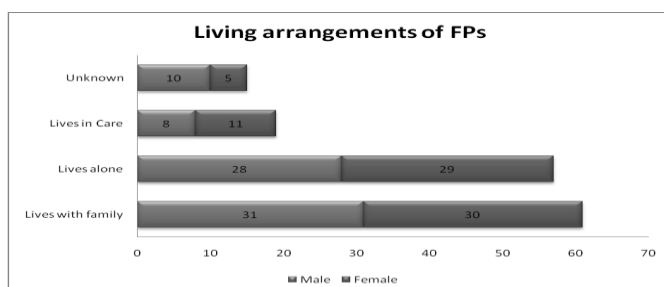


Figure 3. *Living arrangements of frequent presenters*

Discussion

The results of this study need to be interpreted cautiously this was a single site study and does not provide a complete picture of FP populations in Ireland. This study has assisted in better identifying a number of patient populations who may benefit from a targeted multidisciplinary approach in an Emergency Department setting. Such an approach must address the complex health needs of this vulnerable population. Frequent presenters represented 0.5% of adult ED patients, in our population, and 3.9% of all adult ED presentations during the 12-month study period. These data are consistent with observations from studies undertaken overseas.

In particular, we observed that over one third of FPs presented with either a general malaise or limb problems, suggesting that these two diagnosis groups may be the focus of particular interventions to reduce re-attendance. There are many negative associations with FP and while not all FP need to attend the ED, complexities of their health care needs may be better cared for when they attend an ED that is supported by an integrated multidisciplinary medical staff capable of providing medical, nursing, allied health and mental health assessment in a collaborative and efficient manner. This integration needs to involve primary care services, ambulance services, FP case managers or FP care pathways.

FP have an impact on the utilisation of pre-hospital resources with over 50% of FP accessing the ED via the ambulance service. An ambulance service led FP referral service may assist in reducing high utilisation of pre-hospital service. Specific FP case management models may prove beneficial however these models must take a holistic approach to the FP healthcare involving a multidisciplinary team. While the aim of these two models may not reduce FP attendance significantly, they may reduce length of stay and resource utilisation by appropriate levels and address specific gaps in the delivery of complex healthcare

Any future development in understanding the needs of FP must include integration with primary care, ambulance services and allied healthcare workers. This can be further enhanced with multidisciplinary hospital based outreach frameworks aimed at providing supplementary support to the overall healthcare of the FP. There is a clear need for future FP research aimed at evaluating the effectiveness, sustainability and delivery of such infrastructures.

From this research it is evident that despite sizable international literature discussing FP populations and their characteristics there are relatively little Irish studies discussing strategies to cope, influence or manage FPs to any healthcare system. Much of the literature has offered solutions or critique of such solutions, but with Ireland's healthcare system differing greatly from such countries it seems that EDs here may have to generate their own unique solutions or test those that have failed in other healthcare infrastructures.

It is highly recommended that a separate study examining why FPs at this site tend to be from younger age categories and it is important for many reasons. Such a study would need to examine, access to primary care, local community health and local perceptions of ED and GPs.

Limitations

The aim of this study was to examine the characteristics of FPs to the ED by utilising the electronically stored data on ED attendance. As a result of this FP admission rates and length of stay were not examined. Further to this overall diagnosis was not examined. The fact that this was a retrospective study also limited the collection of other data such as co-morbidities, FP perception of ED services and cost of ED investigations. This was a single site study and therefore it does not make any comparison with data from other EDs in Ireland, primary care use or ambulance service utilisation.

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