Dr Foster's case notes

"Frequent flier" patients

Rising healthcare costs and tight budgets mean that primary care trusts (PCT) are under pressure to reduce the number of admissions to hospital. One target group of patients is those with multiple admissions—the "frequent fliers." Improved management of these patients is good medical practice and can be cost effective for managers.^{w1} The case management programme is the latest NHS initiative that aims to reduce the number of elderly frequent fliers.^{w1 w2} We examined hospital episode statistics to reveal the scale of these admissions and to determine predictors of multiple admissions.

The bottom line

- Frequent flier patients accounted for 35.6% of all bed days in 2001-2
- Patients are more likely to have multiple admissions if the following factors were present at their first admission: very young age or old age (especially between 70 and 79 years); male sex; emergency admission; diagnosis of mental health disorder, neoplasm, asthma, diabetes, epilepsy, heart failure, chronic renal failure, or sickle cell anaemia (other diagnoses were not specifically considered in these analyses)

We defined "frequent fliers" as patients admitted as inpatients in the 2001-2 financial year who were subsequently readmitted three or more times within a 12 month period. They represented 14.1% of all patients but accounted for 30.6% of admissions. Their bed days accounted for 35.6% of all bed days. Age had a non-linear relation, with the lowest odds for being a frequent flier in the 5-9 year age range, and the highest in old people, peaking in the 70-79 age group. The odds were greater with socioeconomic deprivation, male sex, initial emergency admission and increasing comorbidity. Of the primary diagnoses considered, each was positively related to the odds of becoming a frequent flier, particularly chronic renal failure and sickle

Factors associated with frequent flier status

Variable	Odds ratio (95% CI)
Age (v 5-9 years)*:	
0-4	1.57 (1.53 to 1.61)
65-69	2.91 (2.84 to 2.98)
70-74	3.10 (3.02 to 3.17)
75-79	3.12 (3.04 to 3.20)
80-84	3.10 (3.02 to 3.17)
85+	2.82 (2.75 to 2.89)
Primary diagnosis:	
Mental and behavioural disorders	1.85 (1.83 to 1.89)
Neoplasms	2.15 (2.13 to 2.17)
Asthma	1.37 (1.34 to 1.42)
Diabetes	1.75 (1.69 to 1.80)
Epilepsy	2.32 (2.24 to 2.40)
Heart failure	1.20 (1.18 to 1.23)
Chronic renal failure	4.70 (4.48 to 4.94)
Sickle cell anaemia	7.53 (6.88 to 8.23)

*Some subgroups have been omitted for brevity.

Proportion of frequent flier patients across primary care trusts

cell anaemia (table). Deprivation had the smallest effect of all the factors examined (see table on bmj.com).

Primary care trusts varied considerably in the proportion of patients who were frequent fliers (figure) and in the proportion of total bed days they used (see bmj.com). The variation between primary care trusts may reflect chance, differences in case mix, or differences in care.^{w3} Our data show that ward level socioeconomic status, age, and diagnosis are important.

The basic figures

- The proportion of frequent flier patients in 2001-2 was 14.1%
- The percentage of all admissions in 2001-2 due to frequent fliers was 30.6%
- In 2001-2 the proportion of patients who were frequent fliers ranged from 9% to 19% in primary care trusts
- The proportion of admissions of frequent fliers ranged from 22% to 40%
- The proportion of total bed days used by frequent fliers ranged from 22% to 52%

This month's Dr Foster's case notes were compiled by Susan Williams, Alex Bottle, Raquel Rogers, and Paul Aylin at the Dr Foster Unit at Imperial College. Dr Foster is an independent research and publishing organisation created to examine measures of clinical performance.

Unabridged version with methodology, additional figure, additional data, and references is on bmj.com