

Effect of patients seeing a general practitioner in accident and emergency on their subsequent reattendance: cohort study

Andrew W Murphy, Patrick K Plunkett, Gerard Bury, Conor Leonard, Jane Walsh, Finian Lynam, Zachary Johnson

General practitioners working in an accident and emergency department manage non-emergency patients safely and use fewer resources than do usual accident and emergency staff.^{1 2} In our previous study we speculated that this intervention might have the potential to break the cycle of “inappropriate attendance” at accident and emergency, use of hospital resources, and perceived confirmation of need for a visit.³ We now report the results of a review of the reattendance rates of our original study group.

Subjects, methods, and results

The setting and methodology of our original study have been described.³ In short, patients who had attended St James’s Hospital accident and emergency department between 1 August 1993 and 1 October 1994 were triaged using a validated system into four categories—“life threatening” (1), “urgent” (2), “semi-urgent” (3), and “delay acceptable” (4). Local general practitioners were employed on a sessional basis to manage patients only from categories 3 and 4. Randomisation of patients to general practitioners or usual accident and emergency staff depended on time of registration.

We identified the patients included in our original study and, using their unique identifying numbers, determined the number of times that they had reattended the accident and emergency department within two years of their index visit. The date of each reattendance was not recorded. With this information, we classified patients as reattenders or non-reattenders. Only subsequent visits categorised as 3 or 4 in the triage system were included in this analysis. We excluded visits that patients had been asked to make for the purpose of review, dressings, etc. We assessed the effects of six variables (see table) on reattendance and, using SPSS, performed a direct logistic regression analysis to test the power of these variables to predict reattendance. Socioeconomic status was determined by eligibility for General Medical Services (access to free primary care and drugs). Roughly a third of the Irish population are eligible for General Medical Services and represent the poorest section of the community.

Of the 4684 patients in our original study, 225 could not be identified for inclusion in this study. Of the remaining 4459 patients, 1890 (42%) reattended at least once to the accident and emergency department within two years of their index visit for management of an unrelated complaint (median number of visits 3 (range 1-293, interquartile range 2-5)). The table shows the effects of the study variables on reattendance. Eligibility for General Medical Services, registration with a general practitioner, male sex, and having an index

visit categorised as 3 increased the likelihood of reattendance. The median age of those who reattended was 49, not significantly different from the median age of 45 of those who did not reattend (Kruskal-Wallis test). A test of the full model, with all six predictors, against a model with a constant value only was statistically reliable ($\chi^2 = 164.45$ (df=6, n=4356), $P < 0.01$). The model was more effective in predicting those who did not reattend: 74% of non-reattenders and 43% of reattenders were correctly predicted, with an overall success rate of 61%. However, the variance in reattendance accounted for overall was small (Cox and Snell test $R^2 = 0.04$).

Comment

The decision of patients to attend an accident and emergency department is complex and involves social, psychological, and medical factors.³ Attempts by health services to decrease the numbers of patients attending accident and emergency departments have generally failed.⁴ Our hypothesis that a single contact with a general practitioner working in accident and emergency would have a longlasting effect on health service use has not been supported, although brief, focused interventions by general practitioners have been shown to have lasting effects in other settings.⁵

Effect of study variables on reattendance of 4459 patients to an accident and emergency department within two years of index visit

Study variable	No (%) of patients who reattended	Relative risk (95% CI) of reattendance
Variables which increased reattendance		
Eligible for General Medical Services*:		
Yes (n=1683)	896 (53.2)	1.49 (1.39 to 1.59)
No (n=2698)	967 (35.8)	1
Registered with a general practitioner*:		
Yes (n=4139)	1767 (42.7)	1.21 (1.03 to 1.41)
No (n=291)	103 (35.4)	1
Sex:		
Male (n=2619)	1142 (43.6)	1.09 (1.01 to 1.17)
Female (n=1855)	744 (40.1)	1
Triage category:		
Triage 3 (n=3211)	1397 (43.5)	1.13 (1.04 to 1.22)
Triage 4 (n=1263)	489 (38.7)	1
Variables which did not affect reattendance		
Type of doctor seen at index visit:		
General practitioner (n=2209)	908 (41.1)	0.95 (0.89 to 1.02)
Usual accident and emergency staff (n=2263)	978 (43.2)	1
Any investigation performed at index visit:		
Yes (n=2415)	1017 (42.1)	1.0 (0.93 to 1.07)
No (n=2059)	869 (42.2)	1

*Information was not available for all patients, so total number of patients is <4459.

Department of General Practice, National University of Ireland, Galway, Republic of Ireland
Andrew W Murphy
professor of general practice

Conor Leonard
researcher

Department of Accident and Emergency Medicine, St James’s Hospital, Dublin
Patrick K Plunkett
consultant

Department of General Practice, National University of Ireland, Dublin
Gerard Bury
professor of general practice

Department of Psychology, National University of Ireland, Galway

Jane Walsh
lecturer

Information and Management Systems Department, St James’s Hospital, Dublin

Finian Lynam
database administrator

Health Information Unit, Eastern Health Board, Dublin

Zachary Johnson
public health medicine specialist

Correspondence to: A W Murphy
andrew.murphy@nuigalway.ie

Zachary Johnson died in November 1999

BMJ 2000;320:903-4

bmj.com

A table outlining the logistic regression analysis appears on the BMJ’s website

We dedicate this paper to the memory of our coauthor Zachary Johnson.

Contributors: AWM had the original idea for the study, participated in interpreting data and writing the article, and is the guarantor for the study. PKP discussed core ideas, organised data analysis, and participated in interpreting data and writing the article. GB discussed core ideas and participated in interpreting data and writing the article. CL, FL, and ZJ participated in data retrieval and analysis. JW participated in interpreting data and writing the article.

Funding: None.

Competing interests: AWM, PKP, GB, and ZJ were authors of the previous article that suggested the present study hypothesis.²

- 1 Dale J, Green J, Reid F, Glucksman E, Higgs R. Primary care in the accident and emergency department. II: Comparison of general practitioners and hospital doctors. *BMJ* 1995;311:427-30.
- 2 Murphy AW, Bury G, Plunkett PK, Gibney D, Smith M, Mullan E, et al. A comparison of general practitioner and usual medical care in an urban accident and emergency department in terms of process, health status, and comparative costs. *BMJ* 1996;312:1135-42.
- 3 Murphy AW. Inappropriate attenders at accident and emergency departments. I: Definition, incidence and reasons for attendance. *Fam Pract* 1998;15:23-32.
- 4 Murphy AW. Inappropriate attenders at accident and emergency departments. II: Health service responses. *Fam Pract* 1998;15:33-7.
- 5 Raw M, McNeill A, West R. Smoking cessation: evidence based recommendations for the healthcare system. *BMJ* 1999;318:182-5.

(Accepted 13 January 2000)

Private funding of elective hospital treatment in England and Wales, 1997-8: national survey

Brian Williams, Pamela Whatmough, Janet McGill, Lesley Rushton

School of
Community Health
Sciences, University
of Nottingham,
Queens Medical
Centre, Nottingham
NG7 2UH

Brian Williams
professor of public
health medicine

Pamela
Whatmough
research associate

Janet McGill
research nurse

Medical Research
Council, Institute
for Environment
and Health,
University of
Leicester, Leicester
LE1 7DD

Lesley Rushton
head of epidemiology

Correspondence to:
B Williams
b.t.williams@
nottingham.ac.uk

BMJ 2000;320:904-5

The longest delays for admission to NHS hospitals have been reduced, and hospital throughput has increased in recent years. Whether the NHS has become more self sufficient in terms of elective treatment in hospital is not known. In 1981 the proportion of elective treatments purchased privately in England and Wales was 13.2%, and in 1986 it was 14.8%.¹ For 1992-3 it was 14.1% (BT Williams, JP Nicholl, unpublished data). Using the same methods as in these previous studies we compared the volume and nature of elective hospital care funded publicly and privately in England and Wales in 1997-8.

Methods and results

Information on patients admitted as inpatients or day cases during sample periods in financial year 1997-8 were obtained from 215 of 221 acute independent hospitals with operating departments in England and Wales²; data obtained included the patient's clinical status, demographic information, and source of funding for the procedure. Numbers for the whole year were estimated by weighting the sample data according to the duration of sampling, the time of year, and the number of hospitals that did not respond; these numbers were validated as previously described.³ Extracts of the latest data (for 1996-7) were obtained from the Department of Health and the Welsh Information Agency's hospital episodes statistics for waiting lists and scheduled admissions for NHS and private patients admitted for non-psychiatric, non-maternity care. Data for first consultant episodes (98% of all consultant episodes for elective patients and equivalent to the number of admissions) and data from independent hospitals were analysed using SPSS statistical software. Although these two sources of data were out of phase by a year, hospital episodes in the NHS for general and acute specialties rose only 2% between 1996-7 and 1997-8 (NHS Executive, personal communication, 1999).

Altogether 739 810 of 5 094 404 patients (14.5%) had had private funding, and 591 755 of 4 415 334 surgical patients (13.4%) had had private funding

(table). One in 10 private patients were treated in NHS hospitals, and 1% of NHS patients were treated in independent hospitals. Of the private admissions, 81% were funded by insurance and 18% were funded by the patient.

Comment

The proportion of elective treatments purchased privately has remained constant over nearly two decades. Although NHS patients and private patients receive a similar range of treatments the types of procedure differ proportionately. A higher than average proportion of patients pay for operations that relieve severe disability or discomfort—such as total replacement of the hip joint, which had a median NHS waiting time of 168 days in 1996-7, and lens operations for cataract (median waiting time 144 days)—and for those for which delay may increase the risk of dying, such as coronary artery operations (94 days).⁴ However, it is unlikely that all surgery performed privately would have been carried out on NHS patients. Procedures for which an above average proportion were funded privately included cosmetic operations for non-pathological conditions and gender reassignment. These have low priority in the NHS. The effectiveness of some other operations, such as middle ear drainage with grommets and stripping and ligation of varicose veins, is debatable, and some NHS authorities are refusing to fund them. Operations such as hysterectomy, prostatectomy, and cholecystectomy may be chosen in some instances instead of alternative, non-surgical forms of treatment. Lower thresholds for intervention apply to the use of some operations for private patients.⁵ Different clinical guidelines may also apply.

One of the functions of the Commission for Health Improvement is to ensure that clinical practice is evidence based. Its remit does not cover the private sector. Some health insurance companies already evaluate clinical indications for certain procedures before authorising them. Individual payers have no arbiter. The new national care standards commission,