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## Self referral to an accident and emergency department for another opinion

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### Abstract

**Objective**—To determine whether patients referring themselves to an accident and emergency department for another opinion after consulting their general practitioner present with serious illness, show any risk factors for being admitted, or are more likely to be patients of particular practitioners.

**Design**—Six month prospective survey.

**Setting**—District general hospital's accident and emergency department, receiving 42 000 new patients a year.

**Patients**—180 Patients identified as attending for another opinion having already consulted a general practitioner.

**Interventions**—Classified as admission, referral to specialist clinic, follow up in accident and emergency department, or referral back to general practitioner.

**End point**—Admission, with an analysis of admitted patients.

**Measurements and main results**—General outcome, diagnostic category, age, time of attendance, time since seen by general practitioner, and name of general practitioner were recorded. Forty seven patients were admitted, 99 were discharged back to the general practitioner (62 without a letter), and two died. Patients were most likely to be admitted if they attended within 24 hours after seeing a general practitioner, were aged under 5, or presented with respiratory or gastrointestinal complaints. Some general practitioners were overrepresented.

**Conclusions**—Important disorders present in this way, and therefore these patients should be seen by a doctor. Information about these attendances could be useful to general practitioners in reviewing their performance.

### Introduction

In this accident and emergency department we noticed an increasing tendency for patients to refer themselves for another opinion after consulting their general practitioner. We thought that this resulted from a breakdown in communication between some patients and their doctors, which resulted in patients

not being referred. One previous study has measured this tendency,<sup>1</sup> but little else is known about these attendances. These patients may be regarded as inappropriately attending the accident and emergency department, and some departments send them back to their general practitioner.<sup>2</sup> This may be unsafe if important illness presents in this way.

Our aims were, firstly, to estimate the amount of serious illness presented in this way as indicated by the general outcome in all patients and medical outcomes in patients admitted; secondly, to analyse some basic demographic features to see if particular groups were at increased risk of being admitted; and, thirdly, to determine whether these attendances were sporadic or whether particular practitioners were overrepresented. This information might be helpful to general practitioners when examining their techniques of consultation or referral.

### Subjects and methods

We carried out a prospective survey from 1 November 1987 to 30 April 1988. Patients referring themselves for another opinion after consulting their general practitioner were identified by staff at reception and their record cards marked. They were defined as those with problems for which they had previously consulted their general practitioner and who had not been referred to the accident and emergency department. Patients who claimed that they were unable to contact or obtain a visit from their general practitioner and those who had been told to attend if their conditions deteriorated were excluded. These exclusions were made to confine the study to patients who deliberately had not reconsulted the doctor they had already seen.

The data analysed were diagnostic category, age, sex, time of attendance, time elapsed since general practitioner had been consulted, whether a letter had been sent to the general practitioner, the name of the general practitioner, and what happened to the patient after attending. The hospital records of those patients admitted were further inspected for length of stay, final diagnosis, and outcome. When appropriate the significance of the data was assessed by the  $\chi^2$  test with Yates's correction.

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TABLE I—General outcome of 180 patients who referred themselves to accident and emergency department

	No of patients
Discharged to own doctor	99
Admitted*	47
Followed up as outpatient	19
Followed up in department	13
Unknown	2

\*Includes one patient who died in the department.

## Results

During the study there were 20 449 new attendances. Of these, 180 (<1%) were self referrals for another opinion. The sex ratio was about equal (female:male 1:1.2). Table I gives details of the 47 patients (26%) admitted, of whom two, aged 3 and 4, died (one of these patients died in the department). Table II gives the reason for attendance grouped into 16 diagnostic categories. Twenty three of the 32 patients with traumatic problems were discharged without follow up. Fifty one patients presented with respiratory or gastrointestinal complaints, of whom 27 (53%) were admitted; this was a significantly greater rate of admission than that for all other categories combined (20/129 (16%),  $p < 0.001$ ).

TABLE II—Classification of diagnosis for patients who referred themselves to accident and emergency department

Diagnostic group	Patients admitted	Patients not admitted
Trauma	1	31
Gastrointestinal	14	17
Soft tissue infection	4	18
Non-traumatic orthopaedics		20
Respiratory	13	7
Otorhinolaryngology	4	8
Dermatology	2	9
Ophthalmology	1	7
No illness detected		7
Genitourinary	1	5
Neurology	4	1
Unclassified		2
Infectious diseases	1	
Dentistry		1
Psychiatry	1	
Died in department	1	
Total	47	133

There were two peaks in the age distribution: 41 patients were aged under 5 (15 under 12 months) and 79 patients were aged 15-34 (table III). Of the 41 aged under 5, 24 (59%) were admitted; this was a significantly greater proportion than the proportion of the remainder admitted (23/139 (17%),  $p < 0.001$ ). This significance was unchanged even when the six children under 5 who attended between 9 pm and 9 am were excluded (see below). The patients aged 15-34 had a relatively low rate of admission (eight patients (10%)).

Most attendances (149) occurred in three main time periods, covering 10 hours: 9 am-2 pm, 3 pm-5 pm, and 6 pm-9 pm (table IV). Only 21 patients attended between 9 pm and 9 am the next morning; 10 of these were admitted, a significantly greater proportion than the proportion admitted during the day (37/159 (23%),  $p < 0.02$ ). Six of the 10 admitted, however, were under 5 years old, and the policy of the paediatric department was to admit all children attending after 9 pm. When these children were excluded there was no significant difference in the rate of admission at night.

The records of 137 patients had a note of the time since the primary consultation. This ranged from a few hours to, in one extreme case, a year. Patients who attended on the same day showed a higher rate of admission (16/30 (53%)) than those who attended more than 24 hours afterwards (23/107 (22%),  $p < 0.001$ ). Of the 99 patients discharged immediately back to their own doctors, only 37 were given a letter. Even in the case of the 20 patients given a prescription only eight were given letters.

The 180 patients were divided among 82 general practitioners from 48 practices. Table V shows the number of patients who attended from each of the 33 local practices. Over half of the general practitioners (44) had only one patient recorded and 68 (83%) had from one to three. Some, however, had considerably more. Some large group practices were understandably well represented. Some practices, however,

were disproportionately overrepresented—for example, one practice with seven partners had seven patients attending, whereas one practice with two partners had 10 and another practice with two partners had 21. Analysis of the patients admitted showed a similar pattern, with the same practitioners and practices being overrepresented.

Inpatient records were traced for 43 of the 47 patients admitted. The duration of admission ranged from less than a day to 42 days (mean 6.8 days). Two patients stayed in hospital less than one day; one died in the department, and one was allowed home later on the same day (a possible glaucoma was diagnosed as iridocyclitis by the ophthalmologist). The mode was 3 days (10 patients), and 13 patients stayed in hospital one week or more. Only six were discharged the next day. Of the 43 patients, two died (1% of attendances, 5% of admissions). One aged 4 died of bacterial meningitis; the other was a 3 year old who presented in extremis, sustained cardiorespiratory arrest, and could not be resuscitated; necropsy showed evidence of a chest infection. Nineteen patients were discharged back to their general practitioner with no follow up in hospital, and 22 were followed up as outpatients. Table VI lists all diagnoses noted in the discharge summary for patients admitted.

For children aged under 5 the rate of admission was 59% (24/41) with a mean duration of stay of 5.4 days. Half of the attendances occurred between 6 pm and 9 pm (20/41), during which time the admission rate was 55% (11 patients). Between 9 pm and 10 am the next morning one sixth of the patients aged under 5 attended (seven patients), and all were admitted. One of these seven children died, and the hospital records of a child with bilateral fractured clavicles were not traced; the mean duration of stay of the five remaining children was 8.4 days.

## ILLUSTRATIVE CASE REPORTS

*Case 1*—A 69 year old man with a history of Parkinson's disease was seen by his general practitioner for the new complaint of fresh rectal bleeding. Haemorrhoids were diagnosed, and he was prescribed

TABLE V—Number of patients from each of 33 local practices who referred themselves to accident and emergency departments according to number of partners in practice

Practice No	No of partners in practice	No of patients	
		Admitted	Not admitted
1	2	11	10
2	6	1	10
3	5	2	8
4	2	1	9
5	2		9
6	4	4	4
7	3	4	4
8	2	3	5
9	7	3	4
10	5	3	3
11	1	2	4
12	3		6
13	2	3	2
14	1	1	4
15	3		5
16	1		5
17	5	1	3
18	6	1	3
19	6		3
20	4		3
21	2		3
22	1		3
23	1		3
24	3	2	
25	4		2
26	4	1	
27	2	1	
28	4		1
29	4		1
30	3		1
31	2		1
32	2		1
33	2		1

TABLE III—Distribution of age among patients who referred themselves to accident and emergency department

Age (years)	No who attended	No admitted
0	41	24
5	11	4
10	7	2
15	20	1
20	23	4
25	17	3
30	19	
35	8	1
40	8	1
45	5	
50	6	1
55	4	1
60	5	3
≥65	6	2
Total	180	47

TABLE IV—Time of attendance of patients who referred themselves to accident and emergency department

Time	No who attended	No admitted
9 am	72	12
2 pm	4	
3 pm	27	2
5 pm	6	2
6 pm	50	21
9 pm-9 am	21	10
Total	180	47

suppositories containing steroids. Bleeding continued throughout the rest of the day, and after an emergency telephone call he was brought by ambulance to the accident and emergency department. He was haemodynamically stable, and examination showed nothing remarkable apart from fresh blood leaking through the anal sphincter. Further examination and investigation showed no signs of haemorrhoids, but appearances on contrast enema were consistent with ischaemic colitis. This was managed conservatively, and over the next four days he passed smaller amounts of blood by the rectum associated with a fall in haemoglobin concentration of 15 g/l. He was reviewed six weeks later and had had no recurrence.

TABLE VI—Final diagnoses for patients who referred themselves to accident and emergency department and were admitted in order of length of stay in hospital

Case No	Age (years)	Diagnosis	Length of stay (days)	Outcome
1	3	Chest infection	<1	Died*
2	62	Iridocyclitis	<1	Followed up as outpatient
3	2	Acute bronchitis	1	No follow up
4	11	Viral infection	1	No follow up
5	3 Months	Upper respiratory tract infection	1	Followed up as outpatient
6	2	Viral illness	1	No follow up
7	5	Tonsillitis and otitis media	1	No follow up
8	1 Month	Colic	1	No follow up
9	24	Eczema	2	Followed up as outpatient
10	23	Rectal abscess	2	Followed up as outpatient
11	4	Asthma	2	Followed up as outpatient
12	1 Month	Viral infection	2	Followed up as outpatient*
13	4	Non-specific abdominal pain	2	No follow up
14	5	Migraine	2	Followed up as outpatient
15	26	Angioneurotic oedema	2	No follow up
16	1	Bronchial asthma	2	Followed up as outpatient*
17	21	Non-specific gastroenteritis	3	No follow up
18	25	Hypertension and glycosuria (pregnant)	3	Followed up as outpatient
19	4	Tonsillitis	3	No follow up
20	18	Gluteal abscess	3	Followed up as outpatient
21	2	Upper respiratory tract infection and gastroenteritis	3	No follow up
22	2	Abscess of right loin	3	Followed up as outpatient
23	4 Months	Upper respiratory tract infection	3	No follow up
24	9 Months	Viral upper respiratory tract infection	3	No follow up*
25	5	Tonsillitis	3	No follow up
26	4	Meningitis	3	Died
27	9 Months	Upper respiratory tract infection	5	No follow up
28	1	Measles	5	No follow up
29	36	Cholesteatoma	5	Followed up as outpatient
30	63	Diverticular disease	6	Followed up as outpatient
31	52	Cellulitis of foot	7	Followed up as outpatient
32	6 Months	Gastroenteritis	7	No follow up
33	69	Ischaemic colitis	8	Followed up as outpatient
34	1	Asthma	8	Followed up as outpatient
35	57	Asthma	10	No follow up
36	2	Septicaemia	12	Followed up as outpatient*
37	27	Asthma	14	No follow up
38	21	Non-specific abdominal pain	16	Followed up as outpatient
39	86	Cellulitis	17	No follow up
40	62	Arterial ulcers	18	Followed up as outpatient
41	1 Month	Pyloric stenosis	23	Followed up as outpatient*
42	1	Bronchopneumonia	35	Followed up as outpatient
43	44	Depressive illness	42	Followed up as outpatient
44	6 Months	Bilateral fractured clavicles*†		
45	6	Headaches†		
46	10	Tonsillitis†		
47	1	Diarrhoea†		

\*Children aged <5 who attended from 9 pm to 10 am.

†Inpatient record could not be traced; diagnosis given is that reached in accident department.

*Case 2*—A 36 year old woman consulted her general practitioner with a week's history of left sided otalgia. She was given tablets and ear drops, but she then began to vomit and the pain got worse. Two days later her left ear began to discharge. She saw her doctor again and was given two sets of tablets, one of which was an analgesic. The pain, however, was not relieved. She had not slept for four nights. The next day she attended the accident and emergency department. On examination she was distressed and in pain. Her left external auditory meatus was full of pus, and she had tender left cervical lymphadenopathy. There was also a white discharge from her right ear. She was admitted to the ear, nose, and throat unit, where she underwent bilateral clearance by suction. A huge cholesteatoma was found on the left and a cholesteatoma with attic erosion on the right. She had long term follow up as an outpatient.

## Discussion

The high rates of admission and referral to specialist clinics, as well as the two deaths of children, show that patients who refer themselves to the accident and emergency department for another opinion after consulting a general practitioner should not be ignored. The largest category of diagnosis was trauma. Understandably, patients turn to the accident and emergency department with traumatic conditions if they are not satisfied with their primary consultation. The fact that 72% (23/32) of patients were discharged with no follow up, however, does not suggest shortcomings in the primary management. The same was true for non-traumatic orthopaedic conditions. Gastrointestinal and respiratory problems formed a large proportion of the reasons for attendance, and the proportion of patients with these who were admitted was high.

If patients delay reconsulting a doctor until their symptoms have deteriorated and then attend the accident department because of a perceived sense of emergency most admissions might be expected to occur at least 24 hours after the first consultation (particularly as the first doctor presumably did not expect perceptible early deterioration). In fact the reverse was true, most admissions resulting from self referral within 24 hours after the primary consultation. Some patients may think that their doctor is not available late at night or be reluctant to disturb him or her. This did not, however, apply to the patients in this study because most attendances and admissions occurred before 9 pm. The picture emerges of admissions occurring after deliberate self referral for an opinion on a medical problem before 9 pm without reference to the general practitioner, often in a child under 5 and within 24 hours after the first consultation.

A significantly greater proportion of children aged under 5 than of older patients were admitted. Their duration of stay was little different from the overall mean. The few admitted under the paediatric policy of admitting those attending at night after 9 pm suggest that the policy is warranted as none were discharged home on the next day, some of the illness presented was serious, and the mean duration of stay (8.4 days) was longer than that of other patients (6.7 days).

The study has implications for both the accident and emergency department and general practice.

## ACCIDENT AND EMERGENCY

All patients referring themselves to the accident and emergency department in this way should be seen by a doctor. Our results show that to prevent this would be unwise. Intervention should be offered only if the problem is a genuine emergency. If the criteria were less stringent the accident and emergency department might become an alternative source, if not first choice, of primary care for many patients. All of these attendances should be reported to the general practitioner. The low incidence of correspondence with general practitioners shown by this study is unacceptable. Unfortunately hospital letters are not always delivered by patients to their doctors.<sup>3</sup>

To implement these recommendations changes of policy would be required in many accident and emergency departments. These changes, though necessary to ensure improved care of patients, have their own implications. When it became known that it is departmental policy to see all patients who present in this way their numbers would inevitably increase. The system would also be open to abuse by patients, who might play off one doctor against another. Such abuse should be minimised by limiting intervention to genuine emergencies. In this way sick patients would have a better chance of receiving the treatment they require.

Not only would it be helpful for the general practi-

tioner to be informed of these attendances, it would also be useful for the accident and emergency department to know more about the patients and perhaps even have details of previous consultations with their doctors. Communication between general practitioners and hospital accident units can be only in the best interests of patients. With advances in information technology there is good reason to believe that this will happen soon.<sup>4</sup>

#### GENERAL PRACTICE

We have identified failures in consultation in general practice and have shown that their distribution among general practitioners is not equal. We have also shown, within this group, an important amount of unreferral illness. Not every attendance or even admission necessarily reflected an error by the general practitioners (table VI), but if furnished with information about their patients' attendances to the department individual practitioners would be able to review their performances in consultations. In particular, they would be able (a) to review the consultation to identify the cause of any breakdown in communication, (b) to identify patients who might have unreasonable expectations, and (c) if patients were admitted, particularly for some serious reason, to review their clinical decision and criteria for referral.

Underreferral clearly exists and should be minimised in the best interests of patients. Information on underreferral, if supplied to general practitioners, could be a more useful indicator of failure to refer than is a low referral rate. The government's intention is to use referral rates as a means of identifying doctors who underrefer and overrefer<sup>6</sup> (though referral rates are difficult to calculate and even more difficult to interpret).<sup>6,7</sup> General practitioners with high referral rates will be asked to refer less and, presumably, those with low rates to refer more. We may, however, expect more emphasis on referring less for economic reasons. The problem with this approach is that there is an important distinction between underreferral and a low referral rate. Underreferral implies a possible error of

management whereas there may be many good reasons for a low referral rate. A doctor with a low referral rate is not necessarily one who underrefers.

We suggest that it may be more useful for general practitioners to be informed of specific cases of possible underreferral than simply to be told that they have a low referral rate. At least in this way doctors with good reasons for having low referral rates will not be targeted unnecessarily by the authorities and those who may have average referral rates but whose patients are frequently admitted to hospital or referred on by the accident unit will be made aware of the fact and have some specific pointers from their own experience to help them prevent it. The data might be collected by computerised accident and emergency systems programmed to record this type of self referral. If this information was provided to general practitioners the number of referrals to consultants would probably increase.

This study has shown considerable unreferral illness. Any changes in practice arising from our recommendations would have economic and ethical repercussions, which would have to be resolved.

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## Chemical inactivation of HIV on surfaces

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### Abstract

To assess whether alcohol and glutaraldehyde are effective disinfectants against dried HIV the virucidal effects of 70% alcohol (ethanol and industrial methylated spirit) and 1% and 2% alkaline glutaraldehyde were tested against cell associated and cell free HIV dried on to a surface. Virus stock (100 µl) or 10 000 cultured C8166 T lymphocytes infected with HIV were dried onto sterile coverslips and immersed in 2% and 1% alkaline glutaraldehyde and 70% ethanol for 30 seconds and one, two, four, and 10 minutes, there being an additional time point of 20 minutes for cell free virus disinfected with 70% industrial methylated spirit. In addition, virus stock in neat serum was tested with 1% and 2% alkaline glutaraldehyde to see whether the fixative properties of glutaraldehyde impair its virucidal properties. Virus activity after disinfection was tested by incubating the coverslips (cell associated virus) or the coverslips and sonicated cell free virus with C8166 T lymphocytes. The lymphocytes were examined for the formation of syncytia and HIV antigens were assayed in the culture fluid. Both 2% and 1% alkaline glutaraldehyde inactivated cell free HIV within one

minute; 2% alkaline glutaraldehyde also inactivated cell free virus in serum within two minutes, but a 1% solution was ineffective after 15 minutes' immersion. Cell associated HIV was inactivated by 2% alkaline glutaraldehyde within two minutes. Seventy per cent industrial methylated spirit failed to inactivate cell free and cell associated HIV within 20 and 15 minutes, respectively, and 70% ethanol did not inactivate cell free virus within 10 minutes.

Seventy per cent industrial methylated spirit and ethanol are not suitable for surface disinfection of HIV. Fresh 2% solutions of alkaline glutaraldehyde are effective, but care should be taken that they are not too dilute or have not become stale when used for disinfecting HIV associated with organic matter.

### Introduction

Alcohols and 2% alkaline glutaraldehyde are widely used for disinfection in laboratories, dental surgeries, and hospitals. Several investigators have reported successful inactivation of HIV in aqueous solutions by alcohols. In 1984 Spire *et al*, using a reverse transcriptase assay to detect surviving virus, found a 99%

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