

MEDICAL PRACTICE

Hospital Topics

Elderly patients in the accident department and their problems

A F DOVE, S H DAVE

Abstract

During two months in the winter and two in the summer information was gleaned about all patients aged 70 and over attending a large accident and emergency department. Comparative figures for the same periods over the previous 20 years showed an increasing number of elderly attenders, the increase being closely related to the increasing proportion of elderly in the population. Using national census data, attendance rates were shown to increase dramatically with age. With increasing age more elderly attended as a result of accidents in the home. The information suggested that social isolation and paucity of support in the community may be responsible for the decision to come to hospital rather than to consult the general practitioner.

The elderly attend accident and emergency departments for a wide range of problems but some do so solely for socioeconomic reasons and are particularly difficult to help.

Introduction

Accident and emergency departments treat a wide variety of patients on a "crisis" basis. This may meet the needs of many patients satisfactorily but not those of the elderly, who have complex reasons for attendance. The elderly attend for a wide range of problems but there are important differences between them and our other patients, and these differences must be recognised if their health needs are to be fulfilled.

Accident and Emergency Department, University Hospital, Queen's Medical Centre, Nottingham NG7 2UH

A F DOVE, MRCP, DOBSTRICOG, consultant
S H DAVE, MRCP, DCH, consultant

Correspondence to: Dr Dove.

Patients and methods

During November and December 1983 and May and June 1984 information was collected on patients aged 70 and over who attended the accident and emergency department at the University Hospital, Nottingham. All patients who attended for a new problem were included. Other activities of the department were extracted from a 10% sample of all attenders which has been taken since 1977.

Information about the population served was obtained from the national censuses of 1961, 1966, 1971, and 1981.^{1,4} Two geographical areas were defined. One was the City of Nottingham, whose boundaries have not changed since 1961 enabling direct comparisons to be made of the different censuses; the population of this area is about 300 000. The other was a broader area with a total population of about 700 000 (county); this area was used for information about population during the survey period. Our department serves a total population of about 800 000 but at the periphery of our area an unquantifiable number of patients attend other departments. The proportions of the population aged 70 and over were comparable in the two areas (city 10.5%, county 9.2%).

The final diagnosis recorded was that made when the patient left the department. The diagnoses included were those which affected management. Arranged admissions to the hospital are not seen in the accident and emergency department and were not included in the survey. Some patients who die unexpectedly are certified dead at the accident and emergency department before transfer to the city mortuary. These patients were included in this survey, though only information about identity was sought.

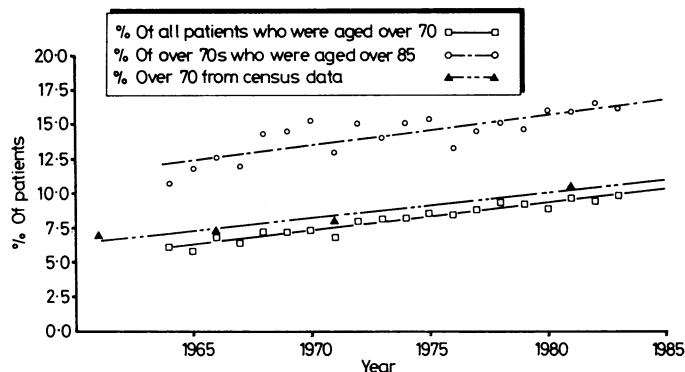
Results

There were 3000 contacts with patients who were aged 70 and over; 2831 were first attenders and 169 had attended before during the study period. Ninety six per cent of patients attended only once. During the winter period 10.9% of all patients attending the department were aged 70 and over and in the summer 10.1%.

Since 1964 the number of patients aged 70 and over seen in the four months studied had increased from 1081 to 3000 and represented an increasing proportion of the patients seen (figure). The increasing proportion was in line with the increasing age of the population served. Within the group of elderly patients there was an increasing number aged 85 and over. The rate of attendance by patients in this age group was more than twice that of the group aged 70-74 (table I).

Within each age group there was close agreement between the observed and expected ratios of men to women, but more people than expected were single, widowed, or divorced (table II). Of those who were single, widowed, or divorced and did not live in old people's homes, 77% lived alone.

Given the large number of old people who are housebound, not



Proportions of patients aged over 70 who attended accident and emergency department during four months in 1964 to 1984.

TABLE I—Attendance rates per 1000 population of different age groups

Age (years)	70-74	75-79	80-84	≥85
Attendance rates	92.2	115.8	166.6	203.5

TABLE II—Marital state and sex of patients seen compared with overall population

Age (years)	Men				Women				Total
	Total seen		% Single, widowed, or divorced		Total seen		% Single, widowed, or divorced		
	Observed No (%)	% Expected*	Observed	Expected*	Observed No (%)	% Expected*	Observed	Expected*	
70-74	424 (44)	43	43	23	541 (56)	57	65	56	965
75-79	305 (36)	42	43	31	552 (64)	58	77	70	857
80-84	196 (29)	30	62	45	469 (71)	70	88	82	665
≥85	102 (20)	22	75	62	411 (80)	78	96	93	513
Total	1027				1973				3000

*Expected percentages taken from 1981 Census.

surprisingly the overwhelming majority (79.4%) of elderly patients came from home. The number coming from home increased significantly with age, as did the number attending after accidents (table III). Analysis of the incidents precipitating attendance showed that 54.5% of patients attended after an accident and 45.5% after an illness. In 1983, 67% of all patients attended after accidents and 33% after illness.

Some 58% of elderly patients came to the department as a result of an emergency 999 call as compared with only 22% of all patients (table IV). A

TABLE III—Location and type of incident precipitating attendance at hospital

Age (years)	No (%) at home		No (%) outside home		Total
	Accident	Illness	Accident	Illness	
70-74	279 (29)	435 (45)	197 (20)	55 (6)	966
75-79	323 (38)	348 (41)	143 (17)	41 (5)	855
80-84	292 (44)	262 (39)	84 (13)	27 (4)	665
≥85	262 (51)	178 (35)	54 (11)	18 (4)	512
Total	1156 (39)	1223 (40)	478 (16)	141 (5)	2998*
Overall	79%		21%		

*In two other cases full details were not recorded.

χ^2 test: age group by location of accident 37.8 with $df=3$ ($p<0.00001$); age group by type of incident 22.7 with $df=3$ ($p<0.00001$).

TABLE IV—Mechanisms of referral of patients

	% Of patients referred by:			
	Emergency 999 call	General practitioner	Self	Others
All patients*	22.2	10.9	57.8	9.2
Patients aged ≥70	58.1	20.6	17.0	4.3

*Figures taken from 10% sample.

TABLE V—Primary diagnosis on leaving department

	No (%) of patients
Injury	1609 (53.6)
Fractures	693
Soft tissue	406
Lacerations	301
Head injuries	100
Dislocations	38
Others	71
Surgical non-injury	271 (9.0)
Medical	962 (32.1)
Cardiovascular	268
Neurological	171
No specific diagnosis	144
Geriatric or psychogeriatric	120
Respiratory system	101
Alimentary system	52
Genitourinary system	25
Miscellaneous (including hypothermia 19 and alcohol excess 12)	81
Dead on arrival at hospital	151 (5.0)
No diagnosis	7 (0.2)
Total	3000 (100.0)

significantly higher proportion of those coming by ambulance (72%; $p<0.01$) were single, widowed, or divorced.

Table V lists the diagnoses. The most common were myocardial infarction (128 patients) and fractured neck or femur (166 patients). Patients with no specific diagnosis (144) were those who had collapsed and in whom investigations had shown no abnormality. Most such patients (55%) came from home, and 80% were discharged. The seven patients without a diagnosis left the department before being seen.

These elderly patients had a high incidence of fractures as opposed to soft tissue injuries. Of those who attended after injuring their wrists and ankles, 160 out of 182 (87.9%) and 46 out of 79 (58.2%), respectively, were found to have fractures. Almost two thirds of patients with injuries to the pelvic area (207/323; 64.1%) had fractures.

Fifty two patients were considered to have attended solely for social reasons and a further 26 because of known senile dementia.

Within the miscellaneous group 12 patients attended solely because of intoxication, and in a further 30 patients alcohol excess was the secondary diagnosis. All 42 were first time attenders.

Discussion

Little is known about the patterns of work of accident and emergency departments, even less about the role of these departments in the care of the elderly. Each year the number of accident

and emergency attendances rises and the increasing elderly bias of our patients causes a disproportionate increase in workload.

The characteristics of patients vary from department to department. Some retirement areas are likely to have a large number of elderly patients, while inner city areas have fewer because of the sparse resident population.⁵ Nottingham reflects national population characteristics, and we believe that our findings are applicable to other centres; in 1979 the percentage of attenders who were elderly was very similar in Leeds (7.5%)⁶ and Nottingham (8.2%).

In absolute numbers three times as many elderly patients attended our department in 1983 as in 1964. This increase followed closely the aging of the population. Comparison of the age distribution of our patients with that of the population at large showed an overrepresentation of those aged under 24 and those aged 70 and over. This pattern had presumably remained constant and accounts for the close relation between the aging of the population and the increasing elderly bias of our patients.

The high incidence of fractures and the low incidence of recurrent attenders (5.6% compared with 16% of all patients) suggest that the elderly do not misuse the department. It appears that social and physical isolation influences the decision to attend; people who are single, widowed, or divorced are more likely to attend and often live alone and therefore have no immediate source of help. The importance of the lack of mobility is shown by the greatly increased use of the ambulance service; the overall figure of 22.2% of our patients coming by ambulance is similar to that in Canterbury (19.6%)⁷ and Leeds (21.6%).⁸ A self referral and an emergency 999 call are similar in that a conscious decision has been made to use the accident department as the source of primary health care; a 999 call could be considered as a self referral without transport.

It is questionable whether the increased attendance by people aged 85 and over reflects an increasing medical need or a decreasing ability to utilise other sources of medical care in an emergency. It has been suggested that the elderly use primary health care services more than the young.⁸ Nevertheless, it is difficult to compare the use of general practitioners and the accident and emergency services because, whereas attendances at accident and emergency departments tend to be for episodes of "new illnesses," many general practice consultations are for chronic conditions. General practitioners visit the elderly more often,⁹ and this may prevent a crisis which precipitates a 999 call and attendance at hospital. This decrease in "non-traumatic" crises may account for the increasing proportion of accidents as a cause of attendance.

In Nottingham and Leeds⁶ about one third of all patients attend for non-traumatic reasons; this rises to 46% for the elderly, though in the over 85s it falls to 38%. In this older age group in our series 83% of accidents occurred at home, reinforcing the importance of campaigns to improve safety standards in the home. The increasing predominance of accidents suggests that the community services can adequately manage the slowly deteriorating condition which results in a direct referral to hospital but cannot provide the immediate response required by accidents. A comparatively minor accident may seriously affect a patient's situation at home¹⁰ and we are usually dependent on the patients' own assessment of their ability to care for themselves: this assessment is sometimes overoptimistic.

The elderly attend the accident department for a wide range of problems. Diagnoses have different implications in the elderly—for example, though there are few intentional overdoses, they are much more serious in the elderly.¹¹ Forty two of our patients were intoxicated when they attended; the dangers of alcohol to an already unsteady person are obvious. Among those with medical complaints there were 120 who came for social or psychogeriatric reasons. These patients are especially difficult to help without knowing their background, and 60% of them were admitted, some probably unnecessarily.

No specific medical diagnosis was made for 144 patients. Though 115 (80%) of these were discharged and none returned, this is clearly unsatisfactory because treatable conditions may have been missed. Lipsitz *et al* found a cause in 69% of elderly patients who had suffered syncope during the previous two years, and many causes were amenable to treatment.¹²

Many patients attend after trauma of varying severity. In the elderly even the most trivial injury may seriously threaten independence. At the other extreme, the severely injured demand the most skilled care because the prognosis for the elderly is so bad.¹³

A high proportion of elderly patients attending after trauma have fractures. The 58% of injured ankles that were found to be fractured in our series contrasts with the 12% reported by Vargish *et al* in 600 patients of all ages with ankle injuries.¹⁴ Nearly 11% of all elderly patients attended because of trauma to the pelvic region; of these, 36% had no fracture but were likely to have severely reduced mobility. Because they have no fracture these patients are not usually admitted, though we accept that we may be returning them to unacceptable home conditions.

Population predictions suggest that the proportion of elderly people will continue to rise until 1996, will remain constant until 2016, and will then start to rise again.¹⁵ If the numbers we see continue to follow the trends the accident and emergency department will become an increasingly important provider of primary health care for the elderly. Conversely, caring for the elderly will become an increasingly large part of our work. Though this may be inevitable, it is likely to be at the expense of our other patients because the elderly require far more care, especially when they are seen in a crisis. There will need to be recognition of the important role of the accident and emergency department and improved integration of its services with those of family practitioners, the social services, and the hospital health care of the elderly department. Those in charge of accident departments will also need to accept the importance of caring for the elderly and arrange appropriate staff training in this neglected sphere. An appreciation of the problems faced by the elderly when seeking medical attention is essential for proper development of services.

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(Accepted 12 December 1985)

Correction

Parkinson's disease in a Scottish city

Some figures were quoted wrongly in this article by Dr W J Mutch and others (22 February, p 534). In the fifth paragraph of the Results the last sentence should have read: "when considered by age and sex the prevalence rose considerably with age, to eight men and 21 women aged over 84" and not seven men and five women as stated. In the last paragraph of the Results the sentence: "Eleven patients could not be examined adequately due to serious intercurrent illness" was inadvertently omitted from between the third and fifth sentences. In the ninth paragraph of the Discussion the penultimate sentence should have read: "Also 47 (17%) of our patients were not receiving treatment . . ." and not 45.