

## Changing patterns in accident and emergency attenders

Alastair Wass, Nigel Zoltie

### Abstract

**Objective**—To investigate demographic changes in attenders at an accident and emergency (A&E) department.

**Methods**—Patients attending Leeds General Infirmary A&E department in 1990 were compared with those attending in 1993 and 1994. Internal quality control suggested that 99% of patients were correctly registered for details of method of arrival, age, and departure (admission/discharge).

**Results**—By 1994 there had been a 6.9% increase in total numbers, including a disproportionate rise in elderly patient attendances. The overall number of patients admitted increased, as did the proportion of those attending the A&E department. There was a 28% increase in number of patients arriving by ambulance between 1990 and 1993, and this rose to 32% in 1994.

**Conclusions**—The increasing number of new patients, especially elderly people, has implications for future planning of A&E departments. The expected demographic rise in the elderly population means that A&E departments must expect to receive more elderly patients. Our figures, if generally applicable, suggest that this is already occurring. Staffing requirements and the physical space necessary to care for these extra patients needs to take these figures into account. These factors are of relevance to both purchasers and providers.

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Key terms: demographic trends; accident and emergency attendances; purchasers; providers

The demographic trend towards an elderly population,<sup>1</sup> coupled with changing patterns of health care delivery, may result in significant changes in the requirements demanded from health care providers. Planning for these changes should be based upon clinical research supported by monitoring and analysis of current attendance trends. We present an analysis of accident and emergency (A&E) attenders in a large metropolitan teaching hospital between 1990 and 1994.

### Methods

All patients registering at the A&E department of Leeds General Infirmary are entered onto a computerised accident and emergency record system (CAER). Demographic details, includ-

ing method of arrival, age, and departure (admission/discharge), are documented. Internal quality control has suggested that 99% of patients are correctly registered with these details. The total numbers attending, their method of attendance, and the numbers admitted following their attendance were compared between 1990, 1993, and 1994.

### Results

In 1990 there were 75 345 new patient attendances at the department. In 1993, there were 78 168 (an increase of 3.8%), and there were 80 564 in 1994, a further increase of 3.1%.

Table 1 shows the method of arrival of these attenders. The biggest changes were an 18% drop in the number of patients arriving by public transport in 1993 (6.8% in 1994) and a 28% increase in those arriving by emergency ambulance (32.2% in 1994). The proportion of new patients arriving by private and public transport as well as those on foot have all fallen since 1990. Despite the increasing use of emergency ambulances, private transport remains the most frequent mode of transport to our department.

When the total attendances are broken down by age, other changes become apparent (table 2). The increase in numbers is mostly due to the 21% increase in patients aged 71-80 years (21.6% in 1994) and a 30% increase in patients aged 81 years and older (28.3% in 1994).

The numbers of patients admitted in each of these age groups are detailed in table 3. There was an increase in absolute numbers in all age groups in 1993 and 1994, except the youngest group in 1993. Table 4 shows the number of patients admitted as a percentage of the attendances for that age group. Again there was a small fall in the percentage of younger patients admitted in 1993, but otherwise an increase in the percentage of patients being admitted in all other age groups during 1993 and 1994.

### Discussion

It is readily apparent from these figures that an increasing number of patients are presenting to our A&E department. This trend is most marked in patients over 70 years of age, and a higher percentage of those attending are being admitted. These elderly patients are increasingly arriving at the A&E department by emergency ambulance or private transport. The use of public transport appears to be in decline and the number of walking patients is decreasing. These trends, if widespread and

Accident and  
Emergency  
Department, Leeds  
General Infirmary,  
Great George Street,  
Leeds LS1 3EX,  
United Kingdom  
A Wass  
N Zoltie

Correspondence to:  
Mr N Zoltie

Table 1 Number of attendances

	1990	1993	1994
Walking	6284 (8.3%)	6065 (7.8%)	6494 (8.1%)
Public transport	10 788 (14.3%)	8860 (11.3%)	10 058 (12.5%)
Private transport	39 605 (52.6%)	39 367 (50.4%)	39 376 (48.9%)
999	18 635 (24.7%)	23 850 (30.5%)	24 636 (30.6%)
Totals	75 345	78 168	80 564

$\chi^2 = 1000$ , DF = 6,  $P < 0.0001$ .

Table 2 Attendances by age groups

Age (years)	1990	1993	1994
0-30	40 870	39 425	40 620
31-50	15 863	17 565	18 652
51-60	5634	5850	6083
61-70	5154	5517	5466
71-80	4455	5414	5419
81-99	3383	4397	4341

$\chi^2 = 406$ , DF = 10,  $P < 0.0001$ .

Table 3 Number of patients admitted

Age (years)	1990	1993	1994
0-30	2724	2485	4295
31-50	1229	1775	2655
51-60	858	1100	1690
61-70	1408	1717	2421
71-80	1551	2074	2987
81-99	1068	1627	2345

$\chi^2 = 187$ , DF = 10,  $P < 0.0001$ .

Table 4 Percentage of attenders admitted

Age (years)	1990	1993	1994
0-30	6.7%	6.3%	10.6%
31-50	7.7%	10.1%	14.3%
51-60	15.2%	18.8%	27.9%
61-70	27.3%	31.1%	44.3%
71-80	34.8%	38.3%	55.3%
81-99	31.6%	37.0%	54.1%

continued, will have a significant effect on demand and provision of health care that affects both purchasers and providers.<sup>2</sup>

Modern health care reorganisation has seen a shift in the emphasis from the provision of hospital based health care to a service based upon the primary health care sector.<sup>3</sup> However, the advantages of 24 hour availability, unrestricted access to hospital based technology, and no need for an appointment enhance the attractiveness of the A&E department even for minor non-emergency problems.<sup>4</sup> It could be argued that the increasing use of the A&E department in part reflects the inadequacy or inaccessibility of the current primary health care system, which is especially highlighted in the elderly population. Purchasers must therefore be aware of this increase in public demand and rational decisions made either to provide extra primary care under the current system, or provide adequate facilities by alternative means. These decisions for those who plan and purchase health care should, at least in part, be based upon quantifiable data on patient attendances in the A&E department. These data should take into account national trends as well as local variations.

Emergency admissions to NHS hospitals are currently rising. There are probably many reasons for this.<sup>5</sup> It has been argued that the increase is already disrupting the contractual system, distorting priorities by causing a shift

in resources to pay for the increase, and making it difficult for both purchasers and NHS trusts to plan for the future with confidence.<sup>5</sup> For purchasers the current changes in the use of the A&E department demand a greater degree of flexibility for the provision of future services. It is the responsibility of the purchasing authority to identify the health care needs of the local population and apply local strategies to meet these requirements.<sup>3</sup> When shaping local services, purchasers need to establish effective dialogue with local hospital doctors, general practitioners and the consumers themselves.<sup>6</sup> Standards of clinical care should be defined within the contracting process, supplemented by regular audit to ensure the continuing provision of effective clinical care.<sup>3 6</sup>

Providers also have a responsibility to monitor such trends as we have described. The increase in the number of patient attendances to our A&E department may necessitate an increase in the staffing levels, coupled with greater efficiency to maintain quality issues, including clinically effective care and waiting times. Our figures suggest a significant increase in the A&E department workload between 1990 and 1994, most marked in the elderly population. Current demographic trends predict a rapid expansion of the elderly population over the next 30-40 years.<sup>1</sup> A&E departments are already an important means of access to health care for the elderly,<sup>4</sup> and studies have consistently shown that members of the elderly population appear to be the most appropriate users of the A&E services.<sup>4 7 8</sup> Elderly patients often need greater nursing and medical input within the A&E setting. They often require examination on a couch or trolley, as their presenting complaint may be the tip of the iceberg for a multiplicity of underlying disease processes.<sup>4 7</sup> With more elderly patients presenting to A&E departments, a higher percentage admission rate, and pressure on beds, patient flow through the A&E department can be impeded. The acutely ill elderly patient should have immediate access to investigation and treatment by appropriately trained medical and nursing staff. This can be facilitated by improved training of A&E staff in care of the elderly issues, improved interdepartmental liaison, protocols for correct management of individual conditions, and a clear admissions policy for the elderly.<sup>3</sup> When planning or maintaining the services in the A&E department, these factors should be taken into account to help patient flow through the department, thus helping provide improved care for all patients.

Our figures also draw attention to other practicalities, which if addressed would improve accessibility to the A&E department. Between 1990 and 1994 the number of patients arriving by emergency ambulance increased by 32.2%. Other studies have reported that the elderly population are consistently more dependent upon the ambulance service for transportation to the A&E department.<sup>4 9-11</sup> With a demographic trend towards an elderly population, the demand upon and the provision of the ambulance service will

have to be monitored carefully. The approach, access, and parking facilities for both ambulances and private vehicles will have to be reviewed in the A&E department to accommodate the increasing majority of patients who are arriving by ambulance or private cars.

#### CONCLUSIONS

The comparison of 1993 and 1994 attendances with 1990 attendances in this A&E department show an increasing number of patients, who are older, more likely to be admitted, and present through the ambulance service or by private transport. The A&E department is an important interface between the hospital and the community. It is a vital and economically influential component of the health care received, especially by the elderly population. Current demographic predictions coupled with data on the patterns of A&E attendances have logistic and financial implications for purchasers of health care in terms of expected future demand. For providers, these trends must influence the planning of future A&E services with special emphasis upon the care

provided for the elderly population. It is essential that both purchasers and providers plan future health care well in advance, implementing well informed change to maintain a high quality service.

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