AUDIT

Acute hospital admissions from nursing homes: some may be avoidable

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Abstract

A retrospective survey of acute hospital admissions from nursing homes over a year to a district hospital revealed high overall hospital admission rates and wide variations of admission rates from similar homes. Medical admissions dominated, infections and poorly controlled heart failure being notably common. A significant proportion of admissions may have been avoided by active chronic disease management, together with better information for doctors responding to emergency calls and specialist support programmes facilitating in situ treatment.

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The long term care of chronically sick elderly patients has undergone a major shift from NHS care facilities to private nursing homes.[1] This has been accompanied by a transfer of responsibility for medical care from consultant led departments of geriatric medicine to general practitioners without specific resourcing and development of procedures and practice.[2] Nursing homes are expected to provide professional nurse led care, but the consequences of removing specialist medical leadership and lack of investment in primary care are uncertain. Deficiencies in care within nursing homes[3–5] have been reported previously. In this survey we investigated admissions to a district hospital from nursing home beds over 12 months.

Table 1 Acute admissions from nursing homes over one year

Admission specialty	*Number of admissions*	*Number of bed-days*
Medical, geriatric assessment and rehabilitation	159	3051
Orthopaedics	53	550
Other surgical	91	452
Mental health	20	599
Total	**323**	**4652**

Table 2 Principal reasons for admission in 57 medical cases admitted from nursing homes

Reason for admission	*n*	*Clinical details*
Infection	16	Site: urine 4; chest 6; septicaemia 1; parotitis 1; cellulitis 2; unspecified 1
Neurological/psychiatric	25	Stroke 7; acute confusion 3; parkinsonsim 3; fall/deterioration 11; depression 1
Cardiovascular	11	New acute presentation 3; chronic heart failure 7; arrhythmia 1
Gastrointestinal/metabolic	10	Dehydration 1; diabetes 4; diarrhoea 2; haematemesis 1
Anaemia	1	
Malignancy	1	

(Note: in seven cases it was impossible to separate the principal presenting problems so both are recorded in the table, making the total 64.)

Methods

Admissions from the 898 nursing home beds in the Avon catchment of the Weston General Hospital were retrospectively surveyed for the year to 31 March 1994. Admissions from homes were identified through use of postal codes of nursing homes for the elderly as a means of identifying cases from the patient administration system. Cases were confirmed as originating from nursing homes by scrutiny of hospital record files.

A random sample of half of the records of patients admitted as medical emergencies was examined in greater detail' using a questionnaire to investigate admission characteristics.

Results

We identified 323 patients as having been admitted from nursing homes. Seventy three admissions were elective and 250 acute (of which 61 were not classified as emergencies, though they were "immediate"). Admission departments and length of stay are shown in table 1. The mean (SD) rate of admission/nursing home bed/year was 0.34 (0.28), with a range of 0.02 to 1.16.

There were 116 medical admissions from the accident and emergency department or referred directly by general practitioners to the medical team. Of the 58 records randomly selected for more detailed scrutiny, 57 were located and studied. This sample had an average age of 82 years (range 55 to 97) and a 2:1 female to male ratio. The mean length of stay of this group was 19 days, with a maximum of 92 days. Hospital files clearly recorded improvement in 65% through hospital care, and death in 19%. The remaining 16% either deteriorated, showed no change in condition, or their outcome was unclear. Multiple diagnoses and medical problems were commonplace, the principal reasons for admission being given in table 2. Two diagnoses—infection and heart disease—together accounted for 47% of admissions. In addition to the cardiovascular cases, a further two cases were admitted in a dehydrated state related to excessive diuretic treatment.

Other factors contributing to admissions included problems related to stroke disease,

confusional states, and sudden change in mobility. Two patients were admitted in hypoglycaemic states, one for a haematemesis, one for palliative care of disseminated malignancy, and two for diarrhoea.

Emergency general surgical admissions from nursing homes progressed to operative intervention at a similar rate to all surgical emergencies in the over 65 year age group (approxiately 50%). In the cases that did not proceed to operation a clear diagnosis was often unclear but constipation and catheter complications were common issues.

The 53 trauma admissions included 32 definite fractures, 17 of which were hip fractures. Of the 17 hip fractures, 12 were chronically confused, 12 received regular sedation, and six received antidepressants. The inpatient mortality of the hip fracture cases was over 50% (nine of 17) and they used up a total of 264 bed-days.

Patients requiring transfusion for recurrent anaemia related to chronic disease, for example urological malignancies as well as chronic haematological disorders, were observed in both surgical and medical beds.

Discussion

Nursing homes and the care they provide have addressed many of the physical shortcomings of long term care in the old NHS chronic sick wards.[6 7] However, general practitioners are becoming overwhelmed by the needs of nursing home patients, particularly when added to the demands of private residential care homes and the increasing numbers of frail elderly people in community settings, especially in retirement areas. In our survey area many general practices have between 20 and 30 nursing home residents per doctor, and each practice may have patients in 10 to 20 nursing homes.[8]

The principal finding in this survey is that chronic disease or predictable complications of chronic disease greatly exceed new diagnoses as the cause of acute hospital admissions of nursing home residents. Variations of acute hospital admission rates between homes are unlikely to reflect case mix variation, raising uncertainties over the consistency of care and referral patterns.

Care home residents should have full access to hospital acute services where necessary,[9] but many clinical conditions may be maintained and crises potentially avoided through regular and relatively inexpensive community chronic disease management programmes. Among the medical admissions cases scrutinised, two causes for admission—infection (18/57) and uncontrolled heart failure (10/57)—stood out.

Infectious presentations often featured delays between the onset of symptoms and therapeutic intervention. Acute or acute on chronic episodes of heart failure admissions only accounted for 30%; 70% were admitted having gradually developed increasing heart failure, over a period of many days in several cases. Reducing admissions for problems such as infection and uncontrolled heart failure should be amenable to planned and resourced care management strategies. Similarly, well organised clinical services could obviate full admission—for example, day case transfusion for chronic anaemia and guidelines for catheter and bowel management could further alleviate demands on acute services.

Improved care planning for some patients could enable more informed decisions to be taken regarding the nature and intensity of interventions in acute illness, in the context of the individual's prognosis and preferences. Properly resourced, supported, and subject to full clinical governance, such programmes may provide more humane as well as more efficient health care for older people. For example, the health gains achieved through the common policy of hip surgery for all femoral neck fractures could be reviewed. Hip fracture is a preterminal event in some very frail patients, for whom the benefits of surgical intervention are questionable. The mortality of our nursing home patients, admittedly a small number, was in excess of 50%—far greater than the overall 14–36% generally accepted for elderly people.[10] Greater understanding of the circumstances that render repair futile may allow a confident referral to palliative care; indeed such information could provide new clinical evidence for the development of advance directives. This proposal is not a criticism of the receiving orthopaedic teams, who are not well placed to make these judgments when confronted by an unknown patient in pain with a surgically remedial fracture. More informed case review might allow such difficult decisions to be made in the community with ethical responsibility.[11]

Hospital admission poses various hazards for elderly patients.[12] Balancing admission risks with therapeutic opportunities and the need for hospital care is a common dilemma. Nursing homes are subject to regulations that demand the presence of professional nurse supervision around the clock and a familiar caring staff who may be best placed to respond to the personal needs of individuals. In this context the rationale for full admission to an acute hospital for straightforward treatments such as fluid replacement and antibiotics is questionable. A recent retrospective survey of outcomes of pneumonia, comparing in situ care with hospital transfer,[13] revealed a similar mortality over the first two weeks but more than double the mortality at two months in the group transferred to hospital. While not directly comparable to the situation in the United Kingdom, these findings, together with the high incidence of infection in our survey, justify trials of in situ treatment, perhaps using hospital outreach teams to augment the roles of nursing staff in homes. General practitioners may become enthusiastic supporters of innovatory care approaches when primary care trusts become responsible for all costs of both hospital and community based care, bringing real incentives for change.

Limited comparisons of acute hospital admissions from nursing homes with transfers from NHS long term care have been made. One study from Edinburgh[14] revealed a significantly higher

transfer rate to acute hospital from nursing home care than from long stay NHS care, and (approximately) a sixfold higher acute bed usage. Our survey has almost certainly underestimated admissions from nursing homes through postal code omissions on hospital records, and the figures may be better than the average as the Weston Hospital has longstanding outreach liaison and close working relations with homes and general practitioners for the nursing home population. Furthermore, we have not studied admissions of elderly people from residential care to hospitals but anticipate similar patterns and opportunities for in situ medical management.

A combination of more active chronic disease surveillance driven by admission assessment processes, in situ treatment, and the availability of comprehensive information for visiting doctors on the clinical status and prognosis of individuals in care homes could avert a large number of hospital admissions. Speculatively, if over 50% of the emergency acute medical and surgical admissions from nursing homes were avoidable and this modest survey was representative of the 157 500 nursing home beds in the United Kingdom,[15] over 25 000 acute hospital admissions might be prevented.

The present disarticulation of personal care in the community from health care may be contributing to increased demands on acute hospital services. Integrating the provision and management of health and care in homes through a consortium engaging primary and secondary health care with social services and care providers has been proposed.[16] This could promote positive approaches to care. More information regarding medical needs and care within homes is required from epidemiological research, to inform the development of good practice,[17] together with a new investment in geriatric medicine beyond the hospital walls.[18]

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