

ORIGINAL ARTICLES

Medical Needs and Survival of NHS Continuing Care Residents

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Tricia.Moylan@lanarkshire.scot.nhs.uk**Abstract****Background and Aims**

To determine the medical needs and survival of patients admitted to NHS continuing care beds for the frail elderly.

Methods

A retrospective cohort study of admissions during one year to 222 beds in south-east Glasgow. Case-sheet review identified the diagnoses on admission. Medical interventions were allocated to one of six predetermined categories. Mortality data was collected up to four years after admission.

Results

One hundred and eighty nine patients (65 male and 133 female) were admitted, 183 (92%) for NHS continuing care. The overall survival at three months was 47.8% and 38.5% at six months. In total 1585 interventions were recorded, 56.3% of admissions required one or more major intervention. Seventy eight (75.7%) of these were managed in the continuing care setting avoiding transfer to an acute hospital bed.

Conclusions

Older people resident in NHS continuing care have a short life expectancy and require frequent medical interventions. Much of this can be provided in the NHS continuing care setting avoiding admission to the acute sector. Shift of care for these patients to private nursing homes may not provide such support.

Introduction

The numbers of NHS continuing care beds in Scotland fell from 7492 to 3816 between 1980 and 2000.¹ This reduction in the level of provision of beds is likely to continue, associated with a shift in the provision of care for dependent frail older people from NHS continuing care to private nursing home care.

One of the justifications for the existence of NHS continuing care beds is the need to provide medical care under the supervision of a consultant. Little is known about the extent of these medical needs, as there have been no specific studies of medical interventions from admission to discharge.

In a previous study of three departments of geriatric medicine in Glasgow in 1994,² it was shown that most patients in NHS continuing care beds had cerebrovascular disease or dementia, and that the mortality rate in the first six months was 48%. The prevalence of malignant disease was 2%.

Scottish Health Resource Utilisation Groups ("SHRUGs") were introduced in 1994. The SHRUGs score has been shown to be a valid and reliable description of older people in all forms of long-term care.³ In this system, medical interventions are recorded only if they occur within seven days of the SHRUGs assessment. This short time scale may be insufficient for accurate assessments of patients' medical needs to be made.

By 2031, an estimated 24% of the population in Scotland will be over the age of 65. The number of people aged 85 years and over is expected to increase from 84,000 in the year 2000 to 151,000 in 2031.¹ To plan care for the expanding population of frail older people it will be essential to achieve a more detailed understanding of their medical needs, wherever they reside.

We aimed to describe a cohort of patients admitted to continuing care beds in south east Glasgow in 1999, to assess their medical needs and to determine their survival.

Methods

The study design was a retrospective cohort study. A pilot study was undertaken before the main study to allow changes in the data collection proforma. Data were collected retrospectively from case-notes by one observer (TM). The data were subsequently coded and entered into a database for analysis. Admissions to continuing care beds in south east Glasgow were identified by methods of multiple ascertainment. Cases were ascertained from both routinely collected hospital data and from manual records in ward admission books.

Details of diagnosis on transfer to continuing care, and medical interventions whilst in continuing care were recorded on the proforma. Data collection began in December 2000. At this point some of the patients in the cohort were already known to have died. Case-notes of deceased patients were reviewed first, so that as many patients as possible could be followed until discharge. Data collection continued until October 2001. Thirty two patients were still resident in continuing care wards at the end of the study. In January 2003, we identified patients who had died in the intervening period by analysing the Greater Glasgow Health Board mortality file. This was combined with a manual search for survivors in the continuing care wards.

We anticipated that there would be a broad spectrum of medical interventions and categories were clearly defined prior to commencement of the study: major, minor, chronic disease management, palliative, new diagnoses and consultant reviews. To give specific examples, a "major intervention" was defined as any problem that would not normally be managed in the community, for example, a fall that resulted in bony injury, a major infection requiring intra-venous therapy, dehydration or acute gastro-intestinal haemorrhage. A "minor intervention" was defined as a problem that would normally be managed in the community eg an infection requiring oral antibiotic treatment. A "chronic disease management" intervention was a medical review or treatment change for a chronic condition such as diabetes mellitus or chronic heart failure. "Palliative" interventions were those in which patients required medical attention in the terminal phase of disease (malignant or non-malignant). A "new diagnosis" was a condition identified for the first time in continuing care, eg newly diagnosed bronchial carcinoma. "Consultant reviews" included any visit by a consultant, either on a ward round or in an emergency. Each patient had a planned three monthly review by the consultant involving medication review, review of weight, blood pressure, cognitive state, hearing and vision and functional abilities. Each intervention was recorded only once in the category felt to be most appropriate by the observer.

The data were entered into a database in Access and analysed in Access and in SPSS. Kaplan-Meier analysis was used to study survival in patients admitted to continuing care beds. The logrank test was used to assess significance of differences in survival in different groups of patients.

In 1999 there were 222 continuing care beds in south east Glasgow situated in seven wards across three sites. Based on data from the 2001 census, the population aged over 65 years in the hospital catchment area was 29,300. Six consultant physicians shared responsibility for the care of patients, almost all of who were admitted from rehabilitation beds under the care of the same six physicians. Clinical assistants provided daily routine medical care. The overall philosophy of medical care was to deliver as much as possible in the patient's "home" and avoid transfer back to the acute setting.

There were 204 admissions in the year. Records were unobtainable for six patients. Of the 198 admissions available for analysis 65 were male and 133 were female. The majority of residents (69%) were aged 80 years or more. Table I shows the age and gender of the study population. Eleven (5.6%) were admitted for respite care, four (2.0%) to await placement in a private nursing home and 183 (92.4%) were admitted for NHS continuing care.

Table I: Cross-tabulation of Age and Sex for all Admissions to Continuing Care Beds in 1999

Age (years)	Male	Female	Total	(%)
<65	2	0	2	(1)
65-69	0	1	1	(1)
70-74	4	10	14	(7)
75-79	23	22	45	(23)
80-84	18	29	47	(24)
85 or over	18	71	89	(45)
Total	65	133	198	

Results

A wide range of diagnoses was recorded at the time of transfer to NHS continuing care. Dementia (n=71, 35.9%) and cerebrovascular disease (n=60, 30.3%) were most common, followed by malignancy (n = 38, 19.2%), cardiac failure (n = 25, 12.6%), and respiratory disease (n = 24, 12.1%). Some patients had more than one diagnosis.

Further analysis was undertaken in 183 patients in the continuing care group only, ie excluding those patients admitted for respite care or awaiting placement in a care home. The total number of interventions was 1,585 for 183 patients. One hundred and three (56.3%) required one or more major intervention (Table II). Seventy-eight (75.7%) of these major interventions were managed in the continuing care setting. There were 40 transfers to the acute hospital: 11 to medical/medicine for the elderly wards, 10 to orthopaedics, four to general surgery and 15 to other departments, including accident and emergency and ear, nose and throat. In total, these patients accounted for 305 bed-days. Eleven patients were transferred for one day only.

Table II: Medical Interventions in 183 Patients Admitted for NHS Continuing Care.

No of Interventions	Major		Minor		Chronic Disease Management	
	No	(%)	No	(%)	No	(%)
0	80	(44)	41	(22)	78	(43)
1	71	(39)	33	(18)	31	(17)
2	23	(13)	26	(14)	19	(10)
3	5	(3)	16	(9)	25	(14)
4	2	(1)	11	(6)	7	(4)
5	2	(1)	11	(6)	9	(5)
6-10	0		32	(17)	12	(7)
11-20	0		11	(6)	2	(1)
21-23	0		2	(1)	0	
Total	183		183		183	

Table II also shows the number of minor interventions and chronic disease management interventions. One hundred and forty-two patients (77.6%) required one or more minor intervention, and 105 (57.4%) required one or more chronic disease management intervention. In total, there were 109 palliative care interventions. Sixty-four (58.7%) of these interventions occurred in 41 patients without malignant disease. Eight patients accounted for 11 new diagnoses.

In total, there were 312 consultant reviews in 148 patients. This included planned three monthly reviews and urgent visits. Fifty-five admissions (30.0%) had no documented consultant review during their stay. This probably reflects the high number of patients who had a very short length of stay, ie less than three months. Seventy-three admissions (39.9%) required ≥ 2 reviews.

Table III: Survival Analysis for Continuing Care Group Only.

No. months	Age group < 85 years		Age group > 85 years		Whole group	
	Deaths	Survivors	Deaths	Survivors	Deaths	Survivors
0	0	98	0*	84	0	182
3	50	48	44*	39	94	87
6	56	42	55	28	111	70
9	60	38	63	20	123	58
12	63	35	64	19	127	54
24	77	21	74	9	151	30
36	83*	14	78*	3	161	14
48	88*	3	79*	0	167	3

*censored data. 10 cases in the <85years age group and 5 in the >85years age group were alive at last follow up or lost to follow up.

Figure 1: Cumulative Survival in the Continuing Care Group over Four Years, 1999 - 2003.

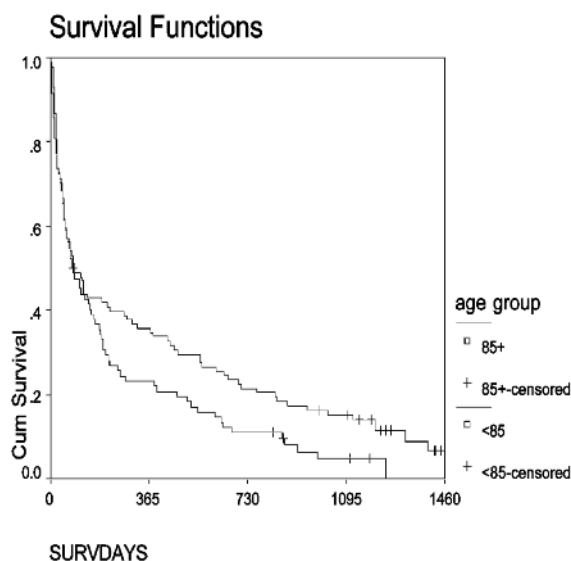


Figure 1 and Table III show the cumulative survival of the cohort up to a maximum of four years. At three months, the overall survival was 47.8%, and at six months, 38.5%. The survival at two years was 21.4% in patients under 85 years of age, and only 10.7% in those over 85 years. This difference in survival was significant (logrank test, $p < 0.05$). None of the over 85 group survived beyond 42 months.

Discussion

This study describes the medical care provided to a group of frail older patients, the majority of who were in the last months of their lives. Although the number of continuing care beds in this part of Glasgow may be larger than in other areas, the residents would otherwise have been in nursing home care, and few would be at home, many having previously had maximum levels of community services.

This study group generated a considerable amount of medical work, which amounted to a minimum of 1585 episodes of care. The majority of this related to minor illness and chronic disease management. The fact that 56.3% of patients required a "major" intervention, in terms of medical care, suggests that acute hospital admission would have been necessary had the patient been resident in a private nursing home. This could have a significant impact on the acute sector in which bed crises are a frequent problem. If this group of frail older people are to be cared for in nursing homes rather than NHS continuing care, adequate and appropriate resources need to be available to manage their medical needs to prevent unnecessary admissions to acute hospitals.

Despite the philosophy of attempting to provide care in the homes, an unexpectedly high proportion of patients (25%) were transferred to the acute hospital site, either for medical or surgical care. Although the appropriateness of each transfer has not been assessed in this study, it would appear that medical interventions are not being withheld in this group.

Comparing this study to earlier work on a group of NHS continuing care residents in the same city,² the prevalence of malignant disease appeared to have increased ten-fold in five years, from 2% to 19.2%.

Several reasons may account for this. It may reflect increasing pressure within the acute sector for patients who might previously have remained in an acute site until death, to be transferred to an alternative facility. The delay in achieving nursing home placement may mean that continuing care is used to speed up placement. Another possible explanation is that a higher number of patients are being diagnosed with cancer because more are undergoing investigation. In addition there was a high rate of palliative interventions in patients without malignant disease. If palliative care continues to be a large part of the workload in NHS continuing care, all medical and nursing staff involved in the care of these patients should have adequate training in this area.

Comparing this study to earlier work on a group of NHS continuing care residents in the same city,² mortality was 61.5% at six months, compared with 48% at six months in 1994 in all patients resident in continuing care, 52.2% of the present group had died within three months. This suggests that older people now admitted to continuing care are frailer than those previously cared for in NHS continuing care. The greater number with diagnosis of malignancy will contribute to this.

There were some limitations to this study. We were unable to follow through all patients' medical needs until their death, which might have provided useful information. We accept that some episodes of medical care might not have been identified in this retrospective review. The high level of medical input that we have shown is therefore only a minimum workload.

Conclusion

Frail older people admitted to NHS continuing care have a short life expectancy and have significant medical needs, including end of life care. Within NHS continuing care most of their medical care can be provided in that setting, reducing bed pressures in the acute sector. The shift of care towards private nursing home care suggests planning for delivery of their medical care needs to be taken into consideration.

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