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Comparison of nursing home residents admitted from home or hospital

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SUMMARY

A growing elderly population coupled with a reduction in hospital long term care has led to an increase in the independent nursing home sector. This is an expensive resource. Proper placement is therefore essential to ensure its efficient use. Prior to the introduction of care management there was no standard assessment procedure for admission to nursing home care from different sources. A nursing home population (n=624) in North and West Belfast was studied and mental scores, levels of disability, and the source of admission to the nursing home recorded. Residents admitted from geriatric medical units (n=132) were compared with those from general medical and surgical wards (n=168) and those from home (n=243). Residents who were admitted from a geriatric unit were the most disabled, those admitted from home were the least and those from general wards had intermediate levels of disability ($p<0.005$). This is likely to be the result of different assessment procedures for prospective nursing home residents. With the introduction of care management, it is hoped that standardised assessment will follow. The roles of different medical specialists in this process is not yet clear. Further study is needed to assess the appropriateness of placement in nursing homes under care management.

INTRODUCTION

Demographic changes have led to an increased number of frail, and very elderly people, and in turn to an increase in the demand for long term nursing care. The decrease in the number of hospital long stay beds in the NHS has meant that most of these patients are now cared for by the independent nursing home sector.[1]

A nursing home place costs in excess of £300 per week, and since the great majority of residents are not self-financing,[2] this represents a considerable financial demand on health resources.

Before the introduction of Care in the Community[3] in April 1993, there was no standardised assessment procedure for nursing home admission,[4] and there has been

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evidence of inappropriate placement.[5] Even after the introduction of care management, medical assessments may not conform to a uniform standard. We studied a population of elderly people resident in nursing homes prior to the introduction of care management in April 1993. We aimed to record levels of disability in residents and to relate these to sources of admission.

MATERIALS AND METHODS

This study was carried out between December 1992 and March 1993. All residents of private and voluntary nursing homes in North and West Belfast were studied as previously described.[2]

The nursing homes were visited by a trained nurse assessor, and a standard proforma was completed. This recorded age, sex, domicile and address from where each resident was admitted. A Barthel activities of daily living score [6] (range 0-20) and an abbreviated mental test questionnaire [7] (range 0-10) were completed. A Clifton Assessment Procedure for the Elderly (CAPE),[8] which is an instrument for assessment of general disability, was also performed. The results were recorded as disability grades from A to E (A equals no impairment, B equals mild impairment with low dependency, C equals moderate impairment and dependency, D equals marked impairment with high dependency and E severe impairment and maximum dependency).

Residents were divided by source of admission from geriatric medical units, general medical or surgical wards, and home. The characteristics of these various groups with different sources of admission were compared.

The results were analysed using the Statistical Package for Social Sciences (SPSS).[9] Differences between continuous and ordinal sets of data were analysed by analysis of variance (ANOVA). Differences between groups in different institutions were compared using Chi-squared analysis. Differences between skewed data were estimated by non-parametric methods.

TABLE I

Mean age, Barthel Index and mental test score of residents in nursing homes who originated from home, general medical and surgical wards and from geriatric medical units. 95% confidence intervals are in brackets.

	Home to nursing home	*General ward to nursing home*	*Geriatric ward to nursing home*
Number	243	168	132
Age in years	83.1 (81.9 - 84.2)	81.8 (80.4 - 83.1)	83.5 (81.7 - 84.4)
Barthel Index	11.2^a (10.4 - 11.9)	9.6^b (8.6 - 10.5)	7.5^c (6.5 - 8.4)
Mental test score	5.3^d (4.8 - 5.8)	4.6^e (4.0 - 5.2)	3.6^f (2.9 - 4.2)

ANOVA intergroup comparison:
ab(p=0.002), ac(p=<0.001), bc(p=0.006)
df(p<0.001), ef(p=0.05)

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RESULTS

A total of 624 persons, 485 (78%) female and 139 (22%) male were entered into the study. They were recruited from 14 private and voluntary nursing homes throughout North and West Belfast. Of these, 243 (38.9%) were admitted from home, or from the homes of relatives. Three hundred were admitted directly from hospital, 168 (26.9%) from general medical and surgical wards (general group), and 132 (21.2%) from geriatric medical units (geriatric group). Of the remaining 81, 33 (5.1%) came from residential accommodation, 1 (0.2%) from a home for the elderly mentally infirm, and 41 (6.6%) from other nursing homes. These last three groups were not studied further. Accurate source of admission could not be determined in the remaining 6 individuals.

The group admitted from hospital comprised 74 males and 226 females (Table 1). There was no significant age difference between the "geriatric" (mean 83.1 years) and the "general" group (mean 81.8 years). There was also no significant difference in the lengths of stay in the nursing home of the two groups though the median length of stay in the group from geriatric units at 14 months was longer than the 10 months for the group from the general wards. The mean Barthel index score of activities of daily living of 7.5 in the geriatric group was significantly lower than the mean score of 9.6 in the group admitted from general wards. The general group had 23 (13%) of its number with a Barthel score of 17 or greater, compared with 11 (8.3%) in the geriatric group. Mental test scores were significantly higher in the group from general wards indicating that the group from geriatric units was more confused than the general ward group.

When compared to the groups admitted from home, both the geriatric and general groups had a significantly lower Barthel index and a lower mental test score (Table I). There was no significant difference in mean age between the group from home and either of the groups from hospital.

TABLE II

Numbers of nursing home residents in different CAPE (Clifton assessment procedure for the elderly) groups, classified by source of admission to the nursing home, with percentages of each source in brackets.

	Admitted from home	*Admitted from general ward*	*Admitted from geriatric unit*
CAPE grouping			
A	33(13.6)	11(6.5)	5(3.8)
B	43(17.7)	32(19.0)	15(11.4)
C	42(17.3)	22(13.1)	14(10.6)
D	45(18.5)	36(21.4)	29(22.0)
E	80(32.9)	67(39.9)	69(52.3)

Significantly more disabled residents in the geriatric group and significantly less disabled residents in the group admitted from home

Chi-squared = 25.4, df = 8, $p<0.005$

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CAPE dependency groupings were available on all the individuals in the study. Groups A and B, which suggests no or little dependency, and would probably be assessed as not requiring nursing care, were recorded in all three groups. Twenty individuals in the geriatric group (15.1%), 43 in the general group (25.6%) and 76 from the group admitted from home (31.3%), were assessed as belonging in these two groups. However, these differences did not reach statistical significance (Chi-squared = 4.91, df = 3. $0.1>p>0.05$). Groups D and E which represent the most severely disabled individuals, and would be thought to be appropriate for nursing home care, were recorded in 98 (74.2%) of the geriatric group, 103 (61.3%) of the general group, and 125 (51.1%) of the group admitted from home. Overall, the distribution of disability between the three groups was significantly different (Chi-squared = 25.4, df = 8, $p<0.005$, Table II).

DISCUSSION

This study has shown a two-fold increase in the number of nursing home residents in North and West Belfast since the survey of 1989.[2] There has been a decrease in the numbers of residents who are functionally independent from 26% to 22%.

The population resident in these nursing homes is not homogeneous. Although the mean level of dependency is high, and mental score is low, there are a considerable number of residents in nursing homes who appear to be independent, and who may therefore be inappropriately placed and the majority of whom were admitted from the home and general groups. Such apparent inappropriate placement has been observed before,[4, 10] but has not previously been related to the source of admission of the residents. Those admitted from a home environment had the greatest degree of independence, those admitted from geriatric medical wards had the least independence and those from general medical and surgical wards had an intermediate level.

Since the ages in the different groups are similar, it is unlikely that this is a factor contributing to the observed differences in dependency between the groups. Similarly, the median length of stay in the nursing home [5] is equivalent in both the general and geriatric groups, (though it was longer in the group admitted from home) and is therefore unlikely to influence the differences between the groups, as any difference between the groups would be expected to decrease with time as they lived in the nursing home environment together. Lastly, while the Barthel ADL and CAPE assessment scores may be more insensitive at the upper (less disabled) end of the scales, they are widely validated in the assessment of elderly people[12] and any deficiencies are unlikely to account for the differences observed between the groups.

Currently elderly patients admitted to general medical wards tend to be younger, to have single pathology and be less frail than those admitted to geriatric wards.[11] This should not in itself account for the higher numbers of independent patients transferred to private nursing home, as it would be expected that persons with uncomplicated illness would return home. The availability of assessment procedures in hospital, and ease of access to the services of physiotherapy, occupational therapy and social work, should make it easier to have a successful discharge home. This is likely to be a significant factor in the higher threshold of dependency in those referred to nursing home care from geriatric wards, indicating that if all dependent elderly had access to skilled inter-disciplinary assessment and rehabilitation the need for nursing home admission might be significantly reduced. Despite this, the proportion of patients who appeared to be independent and who were admitted from geriatric units to nursing homes (at least 15%) is still significant. The persons admitted from their own home need not have been assessed by their general practitioner and

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are likely to have been assessed only by the nursing home staff. It may be in the interest of the home to have a wide variation in levels of dependency among the residents.

This work was carried out before community care was implemented in Northern Ireland in April 1993. This process is intended to institute a more rigorous assessment of patients' care needs. Since the introduction of care management all applicants for nursing home should have multi-disciplinary assessments carried out by a doctor and other members of the health care team. It has been suggested that a doctor (either general practitioner or hospital consultant) should be involved in assessments on patients over the age of 65. There is evidence that this is not being achieved in Northern Ireland.[13]

These results would suggest that a greater involvement by practitioners trained in care of the elderly may lead to an increase in the appropriateness of transfer to nursing home. Further study of admission to private nursing homes after the implementation of care management is planned to assess the efficacy of inter-disciplinary assessment, and the effect, if any, of care management on the level of dependency in nursing home care. It is anticipated that if medical assessment in care management is carried out by practitioners without expertise in care of the elderly, significant differences will remain between those seeking institutional care from home, general and geriatric wards.

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