The Cost Implications of the Changing Population and Characteristics of Care Homes

Robin Darton, Ann Netten and Julien Forder

Discussion Paper 1794
September 2002 (Corrected January 2003)

The Cost Implications of the Changing Population and Characteristics of Care Homes

To be published in the *International Journal of Geriatric Psychiatry*

Robin Darton, Ann Netten and Julien Forder

Discussion Paper 1794
September 2002 (Corrected January 2003)

Contents

Index of Tables

Abstract

***Background*:** Recent increases in care home closures suggest that homes may not be able to balance pressures to reduce costs against pressures to increase standards. Commissioning requires an understanding of the factors affecting costs and how they change over time.
***Methods*:** A survey of care homes for older people was conducted in 21 local authorities in England in 1996. A complete response was obtained for 618 homes (75 per cent) and 11,900 residents. Findings were compared with surveys conducted in 1986 and 1988.
***Results*:** Dependency was significantly related to prices, primarily due to the differential payments to nursing and residential homes. Home characteristics were also related to price, the proportion of single rooms having the largest impact. However, prices were most sensitive to local wage rates, particularly in residential homes. Compared with previous surveys levels of dependency had increased, particularly in voluntary residential homes and nursing homes. Independent homes were more likely to be purpose built, and a higher proportion of beds were in single rooms, although only 30 per cent of private residential, dual registered and nursing homes achieved the proposed level of 80 per cent of beds in single rooms. Staffing ratios appeared to have increased, but price rises were modest, particularly for nursing homes.
***Conclusions*:** Standards of provision have improved over time, although prices appear to have been kept below those expected from increases in costs. Continuing pressures on costs and prices are likely to lead to further closures and a restriction of choice for older people.

***Keywords*:** care homes, costs, dependency, home closures, national minimum standards, prices

Introduction

The Government's Performance Assessment Framework and Best Value regime (Cm 4014, 1998; Cm 4169, 1998) emphasise the importance of reducing costs, increasing the downward pressure on prices being paid by local authorities. At the same time, there are pressures to increase the standards of care provided. Under the Care Standards Act 2000, a National Care Standards Commission was established in April 2002 to apply new care standards (Department of Health, 2001, 2002a) to care homes for older people. If homes are going to maintain an adequate standard of care they must be able to meet their costs from fee income. The recent increase in rates of home closures and claims of a crisis in the industry suggests that this may not be the case (Bunce, 2001). It is important in the commissioning of care home services, the evaluation of claims of home owners and managers, and the evaluation of the use of performance indicators that we have an understanding of the range of factors affecting costs of care and the degree to which these factors change over time.

The analyses presented in this paper are based on data collected in a national survey of residential care and nursing homes for elderly people conducted in 21 local authorities in England in the autumn of 1996. Small homes, those with fewer than four places, were not included. The survey was commissioned by the Department of Health, and the fieldwork was undertaken by Research Services Limited (now IPSOS-RSL). Information about the home was collected in a personal interview with the home manager, who was then asked to complete a questionnaire about individual residents. Information was obtained for 673 (82 per cent) of the selected homes, but a complete response, including information about residents, was obtained for 618 homes (75 per cent). Within the homes, information was collected about a sample of residents, accounting for 11,900 residents from a total of 20,200 individuals. For descriptive analyses, the data have been weighted to ensure representativeness and to adjust for varying selection probabilities and response rates. One home had a majority of residents aged under 65 and has been excluded from the analyses.

The survey was designed to be comparable with a survey conducted in 1986 (Darton et al., 1989). The 1986 survey included private and voluntary residential and nursing homes for elderly people and for the principal younger client groups, although over 90 per cent of nursing homes included elderly people in their clientele. In 1988, the Social Services Inspectorate (SSI) undertook a similar survey of local authority homes (Department of Health Social Services Inspectorate, 1989), although most of the comparable information collected in that survey relates to resident data.

The main measures of resident dependency used in the analyses of prices for this paper were the Barthel Index of Activities of Daily Living (Collin et al., 1988) and the MDS Cognitive Performance Scale (CPS) (Morris et al., 1994). Scores on the Barthel Index range from zero (highest level of dependency) to 20, and scores on the MDS CPS range from zero (intact) to six (very severe impairment). Although these could not be derived for the previous surveys, other measures could be derived for both the 1986 and the 1996 surveys, including the Index of Activities of Daily Living (Katz et al., 1963). The Katz Index cannot be reproduced for the 1988 survey. Individuals are classified by the Katz Index into seven graded categories, ranging from A (independent in six functions) to G (dependent in six functions), or into an 'other' category (dependent in at least two functions, but not classifiable as C to F). For the purposes of this paper, these have been combined into three groups: A and B; C, D and 'other'; and E, F and G. E, F and G correspond to dependence in bathing, dressing, toileting and in at least one other function. A single question on mental confusion was included in the previous surveys, and the scores on the MDS CPS have been grouped into three categories to enable an approximate comparison: 'intact' = code 0; 'mild impairment' = codes 1–3; 'severe impairment' = codes 4–6.

This paper starts by summarising the key results of analyses of the relationships between prices, and characteristics of homes and their residents, reported in Netten et al. (1998). Evidence is presented about how those characteristics associated with costs have changed over time.

Factors Affecting Prices

Information was collected about the homes and the characteristics and prices paid for or by individual residents. Separate analyses were conducted at the home level to investigate factors associated with average prices in residential and nursing homes and costs of local authority managed homes. Here we report on the results of the analyses of prices of independent homes.

Factors associated with prices paid were divided into two groups:

- Cost-related factors: resident and home characteristics and local area costs of inputs.
- Demand-related factors: market characteristics and commissioning/purchasing arrangements.

Full data were available for 147 nursing homes and 199 independent residential care homes. A series of analyses were undertaken to investigate the relationship between prices, cost and mark-up (or profit). The results presented in tables 1 and 2 are based on a reduced form price estimation for nursing homes (Adj R^2=0.62, F=18.97, p<0.001) and residential homes (Adj R^2=0.48, F=12.51, p<0.001). No evidence was found of heteroskedasticity or mis-specification (see Netten et al., 1998, for more details about the statistical analysis).

Overall mark-up rates were modest, estimated at about 10 per cent at the time of the study. The figures in tables 1 and 2 represent the percentage change in price as associated with a one per cent change in the listed factor from its mean value. They are calculated on the assumption that other factors remain constant. Here we focus on the cost-related factors.

The average Barthel score was found to be significantly associated with price in both residential and nursing homes, as would be expected. The separate effect of cognitive impairment was not found to be statistically significant in the price analysis, although from further analyses there were indications that this was associated with underlying costs. However, the most striking finding was that the relationship between dependency characteristics and cost or price was relatively flat within home type. Under the current arrangements most of the effect of dependency on price is associated with the differential prices paid to nursing and residential homes.

There was a more marked relationship between price and dependency in voluntary than private residential homes and private homes were also found to be slightly more costly. In terms of what the home was providing, the proportion of single rooms had the largest impact on prices in both residential and nursing homes, although the percentage change in price was higher for nursing homes than in residential homes. Other home characteristics associated with residential and nursing home prices were being purpose built and having been started from scratch. Residential homes with fewer than ten places charged lower prices and single nursing home organisations charged higher prices. However, all these effects were swamped by the effect of the local labour market. Female wage rates were used to proxy labour input prices. The relationship between wages and prices was particularly sensitive in residential care, with a one per cent rise in wages being associated with a 0.81 per cent rise in prices.

Changes over Time

Resident Dependency (Table 3)

In 1996, residents in nursing homes were substantially more dependent than those in residential homes, having a mean Barthel score of 7.2, compared with 12.7 for residents in local authority residential homes and 13.6 for residents in private and voluntary residential homes. Levels of dependency were greater in all types of home in 1996 than in 1986, but the changes were greater for voluntary residential homes and nursing homes. The proportion of residents classified in categories E, F or G of the Katz Index increased from 12 per cent to 20 per cent in voluntary residential homes and from 43 per cent to 68 per cent in nursing homes, compared with an increase from 19 per cent to 24 per cent in private residential homes. The Katz Index cannot be reproduced for the 1988 survey but, in terms of individual functions, levels of dependency in local authority homes were also lower in 1988 than in 1996, and the differences were also less pronounced than for voluntary residential homes and nursing homes.

Although only approximate comparisons can be made between 1986/88 and 1996, levels of confusion do appear to have been greater in 1996. This was particularly evident in nursing homes, in which 21 per cent of residents were classified as severely confused in 1986, compared with 44 per cent who were classified as severely cognitively impaired in 1996. Among residential homes, the changes appeared most marked in the intact (mentally alert) and mild impairment (mildly confused) categories. There were also more pronounced changes in voluntary residential homes than in local authority and private residential homes. The proportion of residents in voluntary residential homes classified as intact (mentally alert) fell from 62 per cent to 35 per cent. However, for local authority homes, the proportion of residents classified as intact (mentally alert) fell from 41 per cent to 28 per cent, and for private residential homes the proportion fell from 52 per cent to 32 per cent. As with physical dependency, mental confusion was less prevalent among residents of voluntary residential homes than among residents of local authority and private residential homes prior to 1996.

Characteristics of Homes (Table 4)

Size

In the independent sector, nursing homes and dual registered homes were larger, on average, than residential homes, and voluntary residential homes were larger than private residential

homes. The average size of local authority residential homes fell between that of voluntary residential homes and that of dual registered and nursing homes, although local authority homes tended to be concentrated in the 30–50 place range, whereas the sizes of voluntary residential homes, dual registered homes and nursing homes were spread more evenly over the range of sizes. Among private residential homes the sizes of homes were concentrated in the 10–25 place range, with over 30 per cent of homes falling into the 15–19 place range. Approximately two-thirds of places in dual registered homes were nursing places.

Between 1986/88 and 1996, the average size of local authority homes fell and the average sizes of private residential homes and nursing homes increased while the average size of voluntary residential homes showed little change.

Size of Organisation

Ownership of private residential homes was concentrated among small organisations. In 1996, nearly 80 per cent of private residential homes were the only home run by the organisation, compared with slightly over one-half of dual registered and nursing homes and slightly under one-half of the voluntary residential homes. A similar picture was observed in 1986, with a higher proportion (85 per cent) of private residential homes being the only home run by the organisation. The growth in the ownership of homes, particularly dual registered and nursing homes, by major providers, defined as those owning three or more homes, is shown in Laing's market surveys (Laing and Buisson, 1996, 1997). In 1988, 2.5 per cent of places in private residential homes, 22.7 per cent in private dual registered homes and 15.5 per cent in private nursing homes were in homes run by major providers. In 1996, the corresponding proportions were 7.5 per cent, 39.2 per cent and 37.4 per cent.

Method of Acquisition of the Home

In 1996, one-third of private residential homes were started from scratch, compared with just under 60 per cent of voluntary residential and nursing homes. In 1986, private residential homes were more likely to have been started from scratch than purchased as a going concern, whereas the reverse was the case for private nursing homes. Among nursing homes, the increase in the proportion started from scratch, from 48 per cent in 1986 to 56 per cent in 1996, is likely to be related to the growth in ownership by major providers.

Original Function of the Building

Almost all of the local authority homes and just over half of the voluntary homes occupied purpose-built buildings, whereas the majority of private residential homes, dual registered homes and nursing homes occupied converted buildings. Very few private residential homes (8 per cent) occupied purpose-built buildings, but the proportion was larger in dual registered homes (20 per cent) and nursing homes (28 per cent). In 1986, smaller proportions of independent sector homes occupied purpose-built buildings. The growth in the proportion of purpose-built homes among voluntary residential homes is likely to be related to the transfer of local authority homes to the voluntary sector, while the growth in the proportion of purpose-built homes among dual registered and nursing homes is likely to be related to the growth in ownership of these homes by major providers. Among private residential homes, dual registered homes and nursing homes, purpose-built homes were largely built since 1985, and this is likely to be related to the growth in ownership by major providers.

Bedroom Sizes

As already noted, under the Care Standards Act 2000 a National Care Standards Commission has been established to apply a common set of standards to residential and nursing homes. From April 2002, all new homes, extensions and first time registrations have had to provide all places in single rooms and, from April 2007, existing homes were to have provided at least 80 per cent of places in single rooms (Department of Health, 2001). For residential homes for elderly people, this standard was originally set in the 1973 DHSS Building Note (Department of Health and Social Security, 1973). Prior to the new common standards, there were no specific recommendations for bedroom sizes in nursing homes, although most health authorities advised that most beds should be in single rooms (Laing and Buisson, 1997). The updated version of the Code of Practice for Residential Care, relating to residential and nursing homes, reinforced this by stating that all residents should have a single room unless they preferred otherwise (Centre for Policy on Ageing, 1996). However, guidance to the National Care Standards Commission and an amended set of environmental standards were issued in 2002 to indicate that, for existing homes, the standards should be treated as good practice rather than as a requirement (Department of Health, 2002a, b).

In 1996, local authority and voluntary residential homes had a greater proportion of beds in single rooms (89 per cent) than private residential homes (69 per cent) or dual registered and nursing homes (65 per cent). Seventy-seven per cent of local authority and voluntary residential homes met the criterion of a maximum of 20 per cent of beds in double rooms,

compared with about 30 per cent of private residential homes, dual registered homes and nursing homes.

The provision of single bedrooms increased substantially from 1986, when approximately 40 per cent of the beds in private residential and private nursing homes were in single bedrooms, and only 10 per cent of private residential homes and 7 per cent of private nursing homes met the criterion specified in the 1973 Building Note. Among voluntary residential homes in the 1986 survey, 58 per cent of beds were in single bedrooms and 35 per cent of homes met the 1973 Building Note criterion (Darton et al., 1989).

Labour Costs

Prices in nursing homes have risen more slowly than those in residential care, even though it appears that there has been a greater rise in levels of dependency. When adjusted for earnings inflation using the Earnings Index or Personal Social Services Pay Index, prices rose by about 3 per cent in residential homes between 1988 and 1997 but actually fell in nursing homes (based on data in Laing and Buisson, 1997). Since the most recent study the discrepancy has increased further, with care assistant wage rates reported in the regular New Earnings Surveys increasing by 24 per cent between 1995 and 1999. Prices of care home places reported by Laing and Buisson surveys increased by only 10 per cent over the same period.

For residential homes, mean estimated staffing ratios for care staff ranged from 22 to 24 hours per place per week, compared with about 30 hours per place per week in dual registered and nursing homes. The difference between mean estimated staffing ratios for residential homes and for dual registered and nursing homes was greater when staffing ratios were calculated in relation to residents, due to the lower average levels of occupancy in dual registered and nursing homes. Including the time of proprietors in the calculation of staffing ratios for private homes increased the mean estimated staffing ratio for private residential homes by five hours per week, from 22 to 27 hours per place per week, but the difference was smaller for private dual registered and private nursing homes, reflecting the lower level of proprietorial involvement in these homes.

For the survey conducted in 1986, staffing ratios were computed from the number of hours worked by staff per week, and included ancillary staff. Excluding the contribution of proprietors in private homes, private and voluntary residential homes had similar levels of staffing, 23 hours per place in private homes and 21 hours per place in voluntary homes, while the figure for private nursing homes was 34 hours per place (Darton et al., 1989). In

the 1986 survey, ancillary staff accounted for 13 per cent of the whole time equivalent staff of private residential homes, including the proprietors, and for 18 per cent of the whole time equivalent staff of private nursing homes. For voluntary residential homes, ancillary staff accounted for 30 per cent of the whole time equivalent staff. In the 1988 survey of local authority homes conducted by the Department of Health Social Services Inspectorate (1989), the overall staffing ratio per resident was recorded as 21.5 hours per week, although, after excluding manual staff, the figure was only 15.1 hours per resident per week. Since the staffing ratios reported for the previous surveys include ancillary staff, average staffing ratios for care staff appear to have increased significantly between the surveys conducted in 1986 and 1988 and the 1996 survey, particularly among local authority and voluntary residential homes. The smallest increase in average staffing ratios, of approximately two hours per place per week, would appear to have occurred among private residential homes.

The information on the ratio of the number of staff with nursing qualifications to the number of places provides an indication of the intensity of nursing provision within homes. Dual registered and nursing homes had the equivalent of just over one nurse for every four places, private residential homes had the equivalent of one nurse for every ten places and local authority and voluntary homes had the equivalent of one nurse for every 20 places.

Discussion

The results of analyses to date suggest that the underlying relationship between the needs of individuals and the costs of caring for them are confounded by a number of factors. It is worth noting that the reported analyses excluded community nursing costs, although the average costs of nursing inputs (about £5 per resident in residential care at the time of the survey) appear marginal, given the difference in price between residential and nursing home care. The most significant factor is the discontinuity at the residential–nursing home divide, but there are others: differential pricing which is dependent on the source of funding; the nature of local market conditions; and the purchasing policies of local authorities.

The differing regulatory requirements for residential and nursing home care and the pricing policies of homes and local authorities combine to make the major cost difference the result of the decision whether to place an individual in (or move between) residential or nursing home care. This cost discontinuity needs to be taken into account in any estimation of the costs of rising levels of dependency in residential and nursing homes. Where there is an overlap in the average level of dependency between the residential and nursing sectors (that is, the range of Barthel scores within which both residential and nursing homes have been

identified), the level of dependency has very little effect on price (and cost). About 13 per cent of residential care homes had approximately the same average Barthel score as some nursing homes and 20 per cent of nursing homes in the sample shared average Barthel scores with a residential care home.

Clearly, any predictions of cost differences resulting from further changes in levels of dependency will be dependent on the developing regulatory requirements for care homes. It is possible, however, to consider the cost implications of the rise in dependency over the previous decade. During the period 1986–1996 there was a dramatic rise in levels of dependency, especially in nursing homes and voluntary residential homes. In nursing homes the proportion of people who were heavily dependent had risen by 37 per cent and in voluntary residential care by 28 per cent. Prices in nursing homes rose more slowly than in residential care, even though it appeared that there was a greater rise in levels of dependency. The relatively flat relationship between dependency and cost within sectors implies a rather modest increase in the costs of care for this higher dependency population (assuming no substantial productivity changes over the period). Nonetheless, an immediate interpretation in the context of price changes in the same period is that the pricing policies of local authorities resulted in prices being kept below the rise that would have been expected if increases in costs had been passed on to the consumer.

Further analyses are required to consider the implications of the proportions placed in each setting nationally. There are wide variations in the proportion of publicly-funded residents placed in nursing home care (Department of Health, 2000). However, a companion longitudinal survey of admissions of publicly-funded residents, begun in 1995, found that over 80 per cent of placements could be predicted by variations in characteristics of the individual or local supply factors (Netten et al., 2001). It appeared unlikely that variations between local authorities in the types of people approaching them for support could account for the differences between authorities. Instead, the authors suggest that variations in the proportions placed in residential care may be associated with policies and practice in maintaining people in private households. Assuming that outcomes for individuals are not adversely affected by placement in residential care when they are on the borderline with nursing home care, this suggests that there are potential efficiency savings to be made by improving placement decisions. This assumption that outcomes are not adversely affected is an important one, and further analyses of the longitudinal survey should give us some insight into this issue.

Prior to the enactment of the Care Standards Act, the Department of Health issued a consultation document which presented recommended national standards developed for the Department by the Centre for Policy on Ageing (Department of Health, 1999). During the

consultation period, representatives of the care home industry were particularly concerned about the implications of the proposals for improving physical standards and for establishing standards for staffing levels (Laing and Buisson, 2001). A number of amendments were made to the standards and to the timetable for implementation before the national minimum standards were published in March 2001 (Department of Health, 2001). However, as noted above, in 2002 the status of the standards was changed from being a requirement for existing homes to good practice (Department of Health, 2002a, b).

Comparisons between the 1986 and 1996 surveys indicate that standards of provision in residential and nursing home care have improved over time, and these findings are reinforced by those of Laing and Buisson (1997, 2001). However, less than one-third of the private residential homes, dual registered homes and nursing homes in the 1996 survey met the standards which were to have been required for the number of single and double bedrooms. Since the 1996 survey, standards of provision have improved, and Laing and Buisson reported that, in March 2001, before the proposed standards had had time to have an impact, that the proportion of independent homes with more than 20 per cent of shared rooms was 35.2 per cent (Laing and Buisson, 2001). These changes were attributed to consumer pressure and the demands of purchasers and inspecting authorities.

The overall proportion of single places is larger than the proportion of homes meeting the standard due to the construction of new, mainly larger homes with single rooms only (Laing and Buisson, 2001). Thus, pressure to increase the proportion of single rooms will affect smaller homes run by independent providers to a greater extent than those run by corporate providers. Despite their lower standards of amenity, such homes may appeal to older people more than larger homes with higher physical standards.

The analysis based on 1996 data identified both relatively low mark-up rates and that prices and costs were very sensitive to wage rates. Since then staffing costs have been affected by the introduction of the National Minimum Wage in 1999 and the Working Time Directive in 1998, which gave both full-time and part-time staff an entitlement to paid leave. In addition, pay increases for NHS nurses have had an effect on the costs faced by nursing homes (Laing and Buisson, 2001). Changes in staff costs were partly offset by changes in National Insurance rates, and Laing and Buisson suggest that the effects of the National Minimum Wage and the Working Time Directive had largely been absorbed by the 2000/01 financial year (Laing and Buisson, 2001). However, it is clear that prices paid, principally by local authorities, have not kept up with the net increase in wage rates, squeezing profit margins still further.

This study examined the changes in cost raising factors in homes and residents between the mid 1980s and mid 1990s. All the evidence suggests that the pressures building up over that period have continued, and to some extent, been unintentionally exacerbated by policies since then. This, together with the historically high rate of home closure, suggests that the concerns of home owners and managers are not unfounded.

Acknowledgements

This paper is an expanded version of a paper presented at the British Society of Gerontology Annual Conference in September 2000 (Darton et al., 2000). The survey was funded by the Department of Health, and the data collection was undertaken by Research Services Limited (now IPSOS-RSL). We are most grateful to the staff in the local authorities and to the staff of the residential and nursing homes for providing the information for the survey. Responsibility for this paper is the authors' alone, and the views expressed do not necessarily reflect those of the Department of Health.

References

Bunce, C. (2001) The care homes catastrophe, *Nursing Times*, **97**, No. 31, 22-24.

Care Standards Act 2000 (2000 c. 14) The Stationery Office, London.

Centre for Policy on Ageing (1996) *A Better Home Life: A Code of Practice for Residential and Nursing Home Care*, Report of an Advisory Group convened by the Centre for Policy on Ageing and chaired by Kina, Lady Avebury, Centre for Policy on Ageing, London.

Cm 4014 (1998) *Modern Local Government. In Touch with the People*, The Stationery Office, London.

Cm 4169 (1998) *Modernising Social Services. Promoting Independence, Improving Protection, Raising Standards*, The Stationery Office, London.

Collin, C., Wade, D.T., Davies, S. and Horne, V. (1988) The Barthel ADL Index: A Reliability Study, *International Disability Studies*, **10**, No. 2, 61-63.

Darton, R.A., Sutcliffe, E.M. and Wright, K.G. (1989) *PSSRU/CHE Survey of Residential and Nursing Homes. General Report*, PSSRU Discussion Paper No. 654, Personal Social Services Research Unit, University of Kent at Canterbury.

Darton, R., Netten, A. and Forder, J. (2000) The Cost Implications of the Changing Population and Characteristics of Care Homes, in A. Dickinson, H. Bartlett and S. Wade (eds) *Old Age in a New Age. Proceedings of the British Society of Gerontology 29th Annual Conference, Oxford, 8-10 September 2000*, 310-314, School of Health Care, Oxford Brookes University.

Department of Health (1999) *Fit for the Future? National Required Standards for Residential and Nursing Homes for Older People*, Consultation Document, Department of Health, London.

Department of Health (2000) *Community Care Statistics 1999. Residential Personal Social Services for Adults, England*, Statistical Bulletin 2000/2, March 2000, Department of Health, London.

Department of Health (2001) *Care Homes for Older People. National Minimum Standards*, The Stationery Office, London.

Department of Health (2002a) *Care Homes for Older People and Younger Adults. National Minimum Standards for Care Homes for Older People. National Minimum Standards for Care Homes for Younger Adults (18-65). Proposed Amended Environmental Standards*, Consultation Document – August 2002, Department of Health, London.

Department of Health (2002b) Press Release 2002/0049, *New Package to Support Launch of National Minimum Standards for Care Services*.

Department of Health and Social Security (1973) *Local Authority Building Note Number 2. Residential Accommodation for Elderly People*, HMSO, London.

Department of Health Social Services Inspectorate (1989) *Towards a Climate of Confidence*, Report of a National Inspection of Management Arrangements for Public Sector Residential Care for Elderly People, Department of Health, London.

Katz, S., Ford, A.B., Moskowitz, R.W., Jackson, B.A. and Jaffe, M.W. (1963) Studies of illness in the aged. The Index of ADL: a standardized measure of biological and psychosocial function, *Journal of the American Medical Association*, **185**, No. 12, 914-919.

Laing and Buisson (1996) *Care of Elderly People: Market Survey 1996, 9*th ed., Laing and Buisson, London.

Laing and Buisson (1997) *Care of Elderly People: Market Survey 1997*, 10th ed., Laing and Buisson, London.

Laing and Buisson (2001) *Care of Elderly People: Market Survey 2001*, 14th ed., Laing and Buisson, London.

Morris, J.N., Fries, B.E., Mehr, D.R., Hawes, C., Phillips, C., Mor, V. and Lipsitz, L.A. (1994) MDS Cognitive Performance Scale, *Journal of Gerontology: Medical Sciences*, **49**, No. 4, M174-M182.

Netten, A., Bebbington, A., Darton, R., Forder, J. and Miles, K. (1998) *1996 Survey of Care Homes for Elderly People. Final Report*, PSSRU Discussion Paper No. 1423/2, Personal Social Services Research Unit, University of Kent at Canterbury.

Netten, A., Darton, R., Bebbington, A. and Brown, P. (2001) Residential or nursing home care? The appropriateness of placement decisions, *Ageing and Society*, **21**, Part 1, 3-23.

Table 1: Price Analysis – Nursing Homes

Variable	*Per cent change in price*
Dependency characteristics	
+1% Barthel score	-0.007
+1% Barthel – high LA funded	-0.001
+1% Barthel – low LA funded	-0.014
Product characteristics	
Purpose built	0.016
Started from scratch	-0.015
Mental health (committed beds)	-0.005
Single rooms (per bed)	0.040
Not on LA list	-0.011
Single home organisation	0.009
LA characteristics	
Female wage (LA)	0.449
Nursing places per LA per head	-0.055
Commissioning/purchasing	
Fixed price LA	0.007
Fixed price LA – non-London	0.001
Fixed price LA – London	0.040
+1% LA funded	-0.042

Table 2: Price Analysis – Residential Care Homes

Variable	*Per cent change in price*
Dependency characteristics	
+1% Barthel score	-0.125
+1% Barthel – private home	-0.025
+1% Barthel – voluntary home	-0.235
Product characteristics	
Private home	0.022
Purpose built	0.008
Home started from scratch	0.019
Single room (per bed)	0.026
Small home (<10 places)	-0.003
LA characteristics	
Female wage (LA)	0.812
Total places (nursing and residential) per head in LA	-0.019
Total places (nursing and residential) per head in London LA	-0.052
LA population	-0.006
Commissioning/purchasing	
Price set independently of dependency	-0.011
+1% privately funded	0.022

Table 3: Dependency of Residents in Residential and Nursing Homes for Elderly People, 1986–96, by Type of Home

Dependency	*Local authority homes*		*Voluntary residential*		*Private residential*		*Nursing homes*		*Dual reg*
	1988	*1996*	*1986*	*1996*	*1986*	*1996*	*1986*	*1996*	*1996*
	%	%	%	%	%	%	%	%	%
Katz ADL groups[1]									
Low dependency	-	51	74	60	63	54	37	17	31
Moderate dependency	-	20	11	18	14	18	14	12	15
High dependency	-	26	12	20	19	24	43	68	51
Unclassified	-	3	3	2	4	4	7	3	3
Confusion[2]									
Intact	41	28	62	35	52	32	42	14	23
Mild impairment	37	47	26	46	32	48	37	42	46
Severe impairment	21	25	12	19	16	20	21	44	31

Notes:

1. Low dependency = A, B; moderate dependency = C, D; high dependency = E, F, G; unclassified = dependent in at least 2 functions, not classifiable as C–F.
2. MDS CPS categories: intact = code 0; mild impairment = codes 1–3; severe impairment = codes 4–6.

Table 4: Physical Characteristics of Residential and Nursing Homes for Elderly People, 1986–96, by Type of Home

Characteristics	*Local authority homes*		*Voluntary residential*		*Private residential*		*Nursing homes*		*Dual reg*
	1988	*1996*	*1986*	*1996*	*1986*	*1996*	*1986*	*1996*	*1996*
Mean no places	44	35	31	30	18	20	29	38	39
% single home owned	na	na	37	43	85	78	60	58	53
% started from scratch	-	-	58	59	65	33	48	56	43
% purpose built	-	93	30	53	3	8	8	28	20
% beds in single rooms	-	89	58	89	40	69	43	65	65

Note:

1. ‘na’ = ‘not applicable’.